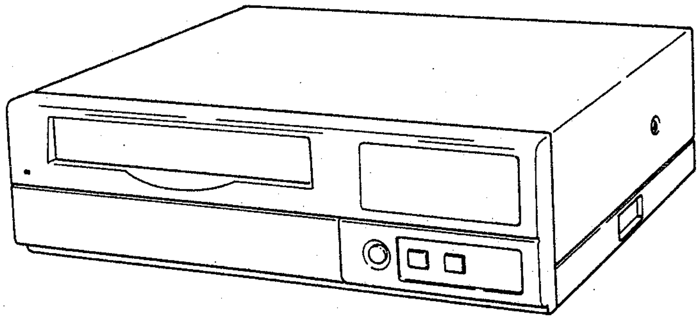
Service Manual

VHS

Operating Instructions
Disassembly Procedures
Maintenance
Mechanical Adjustment Procedures
Electrical Adjustment Procedures
Block Diagrams
Schematic Diagram & Circuit Board Diagrams
Exploded Views & Replacement Parts List

Time Lapse Video Cassette Recorder

AG-6540P



Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

INTRODUCTION

This Service Manual contains the technical information which service personnel to understand and service the Panasonic VHS Time Lapse Video Cassette Recorder model AG-6540.

Specifications

Power Source:	**120V AC, 50-60Hz**
Power Consumption:	**Approx. 25W**

▨ is the safety information.

General

Operating Temperature:	41° to 104°F
Operating Humidity:	35% to 80%
Dimensions:	15″ (W) × 4-7/16″ (H) × 13-7/16″ (D)
Weight:	15.4 lb (7.0kg)
Recording/playback system:	4 rotary heads helical scan, Azimuth recording system
Tape Speed:	7/16 ips (6H mode)
Tape format:	VHS standard tape
Recording time:	6 hours HDR: L18/L24/24/48/72/96/120/180/240/480/960 hours and 1-shot mode
FF/REW time:	Less than 3min. (with 120-minute tape)

VIDEO

Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal	
Modulation System:	Luminance;	Frequency modulation recording
	Color signal;	Converted subcarrier phase shift recording
Video input (BNC):	1.0Vp-p, 75 ohms, unbalanced	
Video output (BNC):	1.0Vp-p, 75 ohms, unbalanced	
Horizontal resolution:	B/W mode;	more than 370 lines (HI-BAND B/W ON)
	Color mode;	more than 230 lines
S/N:	B/W mode;	better than 42 dB (SC trap OFF)
	Color mode;	better than 42 dB (SC trap ON)

AUDIO

Line input (phono):	–10 dBV, 47 kohms, unbalanced
Mic input (mini-jack):	–60 dBV, 600 ohms to 4.7 kohms, unbalanced
Line output (phono):	–8 dBV, 600 ohms, unbalanced
Track:	1 track (normal)
Recording/playback mode:	6H/L18H/L24H mode

Standard accessory

Power cord:	× 1

Weight and dimensions show are approximate.
Specifications are subject to change without notice.

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SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 5.2MΩ.
   When the exposed metal dose not have a return path to the chassis, the reading must be ∞.

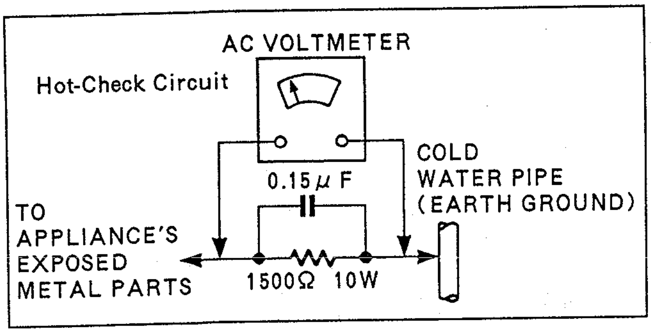

Figure 1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with 0.15μF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless mother such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

NOTE: It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

SECTION 1

OPERATING INSTRUCTIONS

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Features

Highly reliable IQ (intelligent quest) mechanism

- ■ 2 reel motors
  Each of the two reels for taking up and advancing the tape has its own motor.

- ■ New brush-less motors
  Newly developed and extremely durable brush-less motors are used for the direct drive (DD) motors.

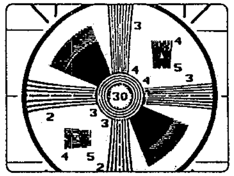
- ■ Large-diameter impedance rollers
  These large-diameter rollers made of pure brass have a large mass to keep the tape tension constant.

- ■ 16-bit digital servo system
  This controls the tape transport system to a high degree of accuracy and stabilizes tape transport. It improves the recording and playback accuracy and enhances the picture quality overall.

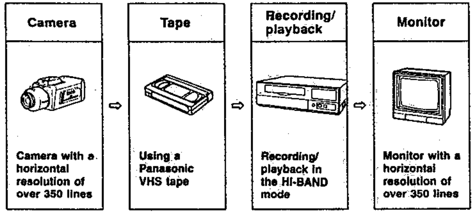
HI-BAND system with high picture quality

Setting HI-BAND B/W under [VIDEO] on menu screen 3 to ON enables high-definition pictures with a horizontal resolution of more than 350 lines to be produced but only in black-and-white mode.

Horizontal resolution of more than 350 lines



■ Conditions for achieving a horizontal resolution of over 350 lines


Camera
Tape
Recording/ playback
Monitor
Camera with a horizontal resolution of over 350 lines
Using a Panasonic VHS tape
Recording/ playback in the HI-BAND mode
Monitor with a horizontal resolution of over 350 lines

Multiple-function recording modes

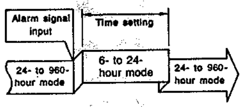
- ■ Wide variety of recording time modes enabling long-duration recording
  - 6-hour recording mode
  - L18-, L24-, 24-, 48-, 72-, 96-, 120-, 180-, 240-, 480-, 960-hour high-density recording (HDR) modes
    Using the high-density recording (HDR) mode results in recording intervals approximately one-third the size of those model of AG-6040 in the corresponding recording mode. This means that approximately three times as many frames can be recorded.
  - 1-shot recording mode

- ■ Internal timer recording modes for achieving the automation and labor-saving of monitoring functions

- ■ External timer recording modes for even more reliable operation

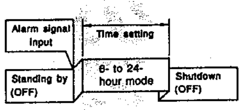
- ■ Alarm recording mode which, when an alarm signal is input, switches the VTR to an hour mode enabling high-fidelity pictures to be recorded

Coupled to emergency bell and alarm
- **Corners where a cash dispenser or automatic teller machine is installed**
- **Convenience stores, etc.**


Alarm signal input
Time setting
24- to 960-hour mode
6- to 24-hour mode
24- to 960-hour mode

- ■ Sensor recording mode which starts recording when an alarm signal is input even when the VTR is shut down or when the power is OFF (emergency recording)

- **Sensor recording is possible even when the VTR is standing by in the internal timer recording mode.**

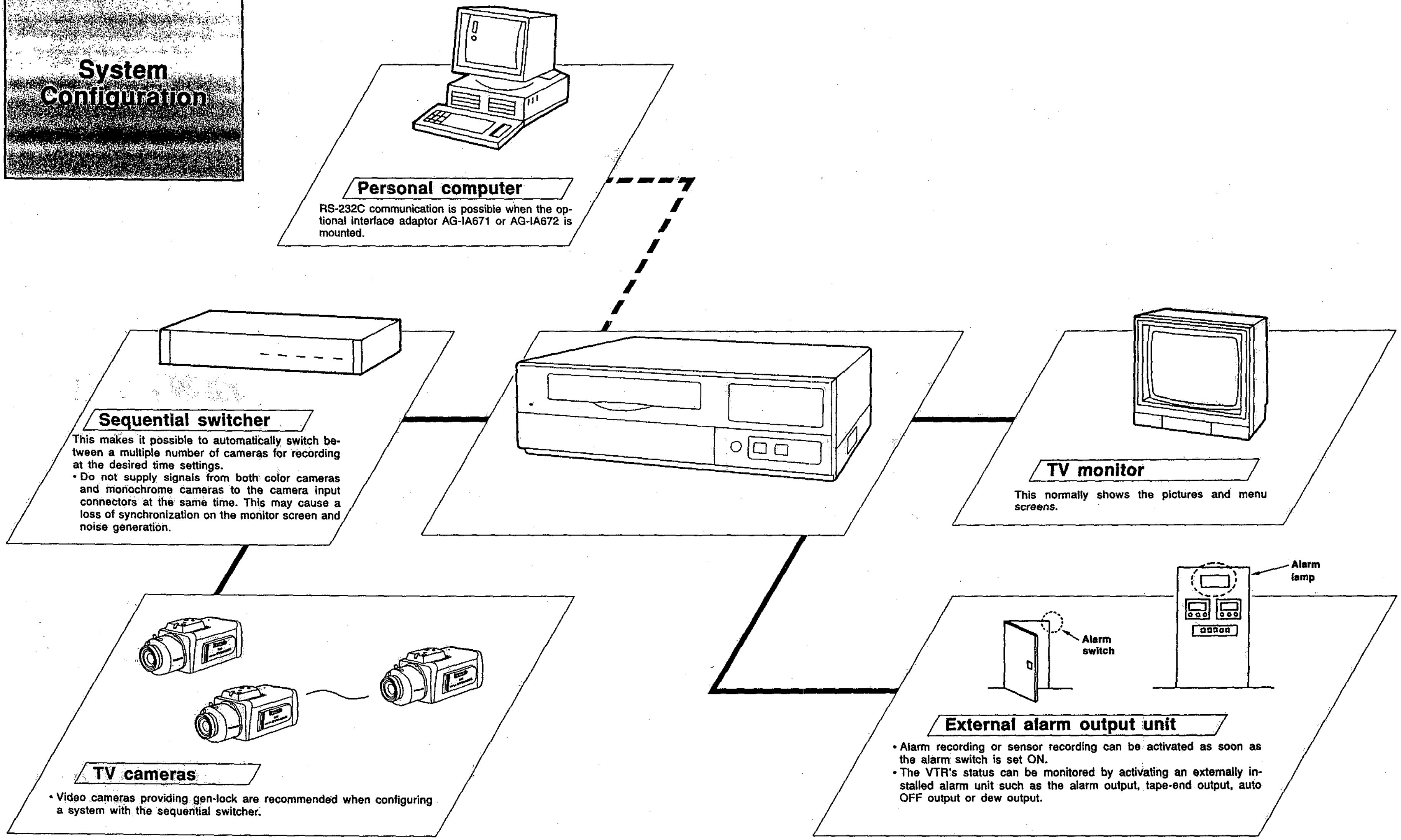

Alarm signal input
Time setting
Standing by (OFF)
6- to 24-hour mode
Shutdown (OFF)

(It is also possible to prevent the time mode from being changed during alarm recording or sensor recording.)

Other Features

- ■ The cleaning roller automatically cleans the head cylinder each time a tape is loaded.
- ■ When the optional interface adaptor AG-IA671 or AG-IA672 is mounted, a personal computer can be used to control the VTR.
- ■ When the optional interface adaptor AG-IA671 is mounted, VITC time codes can slso be recorded (see page 77).

System Configuration



Personal computer

RS-232C communication is possible when the optional interface adaptor AG-IA671 or AG-IA672 is mounted.

Sequential switcher

This makes it possible to automatically switch between a multiple number of cameras for recording at the desired time settings.

- Do not supply signals from both color cameras and monochrome cameras to the camera input connectors at the same time. This may cause a loss of synchronization on the monitor screen and noise generation.

TV monitor

This normally shows the pictures and menu screens.

TV cameras

- Video cameras providing gen-lock are recommended when configuring a system with the sequential switcher.

External alarm output unit

- Alarm recording or sensor recording can be activated as soon as the alarm switch is set ON.
- The VTR's status can be monitored by activating an externally installed alarm unit such as the alarm output, tape-end output, auto OFF output or dew output.

Controls and Their Functions

Front Panel

① **Power Lamp**
This lights when the power is turned on.

② **Cassette Holder** (see page 14)

③ **Display Section** (see page 10)

④ **EJECT Button** (see page 14)

⑤ **REC REVIEW Button** (see page 16)
When this is pressed while recording is in progress, the recording can be monitored.

⑥ **REC Button** (see page 18)

Sub Panel

⑦ **POWER Button**

⑧ **TRACKING Controls** (see page 31)
Used to adjust the tracking.

⑨ **REC MODE Button** (see page 17)
Used to select the recording mode.

⑩ **REV PLAY Button** (see page 30)

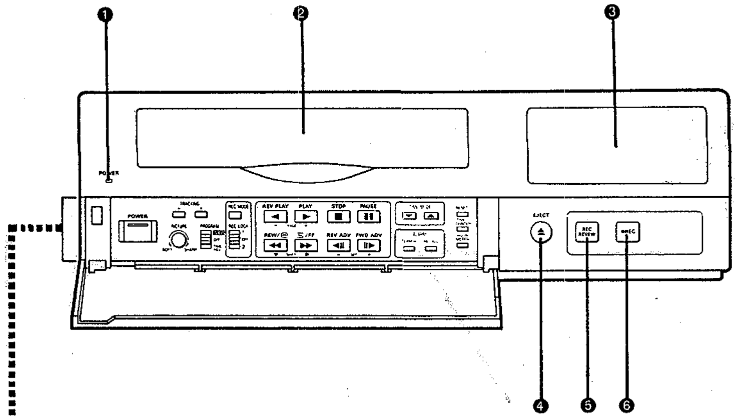
⑪ **PLAY Button** (see page 30)

⑫ **STOP Button** (see page 14)

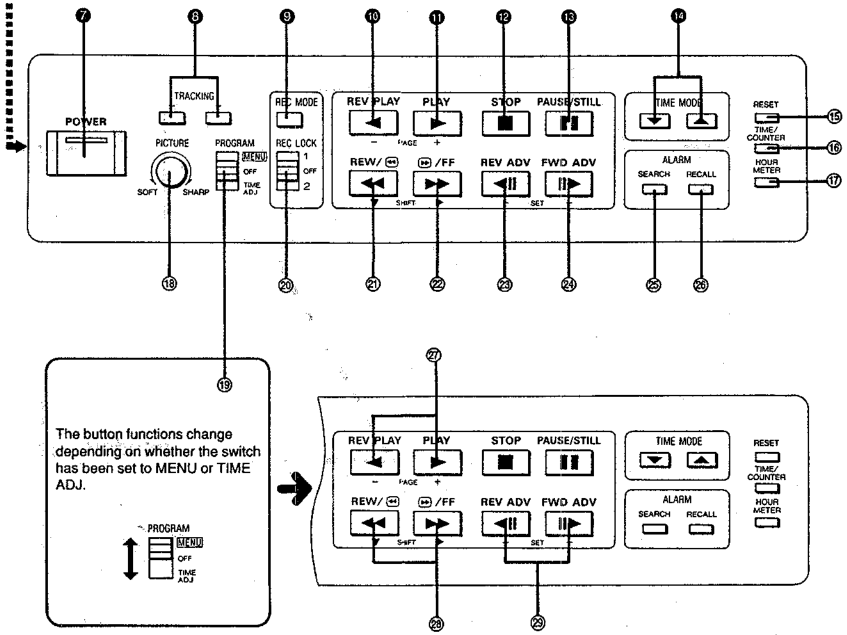
⑬ **PAUSE/STILL Button** (see page 15)
Used for temporarily stopping recording or for still-picture playback.

⑭ **TIME MODE Buttons** (see page 17)
Used to select the time mode.

Front panel


①
②
③
④
⑤
⑥
POWER
EJECT

Expanded view of sub panel


⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
POWER
TRACKING
PICTURE
SOFT
SHARP
PROGRAM
MENU
OFF
TIME ADJ
REC MODE
REC LOCK
1
OFF
2
REV PLAY
PLAY
STOP
PAUSE/STILL
– PAGE +
REW/⏮
⏭/FF
REV ADV
FWD ADV
SHIFT
SET
TIME MODE
ALARM
SEARCH
RECALL
RESET
TIME/COUNTER
HOUR METER
⑮
⑯
⑰
⑱
⑲
⑳
㉑
㉒
㉓
㉔
㉕
㉖
The button functions change depending on whether the switch has been set to MENU or TIME ADJ.
PROGRAM
MENU
OFF
TIME ADJ
㉗
㉘
㉙

Sub Panel

⑮ **RESET Button** (see pages 17, 23, 44)
Used to reset the tape.

⑯ **TIME/COUNTER Display Selector Button** (see page 17)
Used to switch between the time display and counter display.

⑰ **HOUR METER Button**
(see page 75)
Press this to display the total time that the VTR has been used (the cylinder has turned).

⑱ **PICTURE Control** (see page 31)
Used to adjust the playback picture quality.

⑲ **PROGRAM Switch** (see pages 16, 34, 39)
Used to display the menus and set the time.

⑳ **REC LOCK Switch** (see page 17)
Used to set the recording lock mode.

㉑ **REW Button** (see pages 15, 32)

㉒ **FF Button** (see pages 15, 32)

㉓ **FIELD ADV (REV) Button**
(see page 15)

㉔ **FIELD ADV (FWD) Button**
(see page 15)

㉕ **ALARM SEARCH Button**
(see page 33)
Used to set the alarm search function.

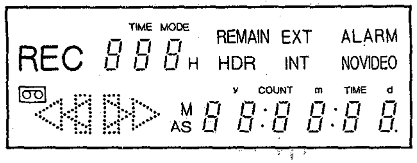
㉖ **ALARM RECALL Button**
(see page 23)
Used to display the alarm memory data on the monitor screen.

㉗ **PAGE Buttons** (see page 39)
Used to move the menu screen up or down by one page.

㉘ **SHIFT Buttons** (see page 39)
Used to select items on the menu screen.

㉙ **SET Buttons** (see page 39)
Used to select the setting items.

Description of Displays



Various information relating to the VTR appears on the large-sized display on the front panel.

NOVIDEO	Flashes when the input video signal is not input.
REMAIN	Flashes when the VTR reaches near the end of the tape during recording. It appears when the "BUZZER" on the menu screen 4 is set to ON.
HDR	Indicates when recording or playback is established in the High Density Recording mode.

REC	Lights up during recording.
TIME MODE 8·8 8H	Indicates the hour mode.
EXT INT	Indicates the recording mode. No display: Regular mode EXT: External timer recording mode INT Internal timer recording mode (when this mode is selected, the power is turned off).
ALARM	Appears when the alarm recording mode is set. It appears when "MODE" on menu screen 4 is set to any of the options except "OFF." (See page 46)
📼	Appears when a cassette is inserted. After the recording review, this flashes when an error occurs. (See page 71)
◁◁ ▯▯ ▷▷	Indicates the VTR's operating mode. ▷ or ▯▷ : Playback ◁ : Reverse playback REC ▷ : Recording, monitoring of recording REC ▯▯ : Recording pause ▯▯ : Still-picture, frame advance ▷▷ : Fast forward, search forward ◁◁ : Rewind, search reverse
M AS	Appears when the alarm search mode is established. (see page 33)
8 8·8 8·8 8	Indicates the time or tape counter value.
E - 2	Indicates an error code when an error occurs. (See page 71)

For First-Time Operators

Overall operational flow

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Recording

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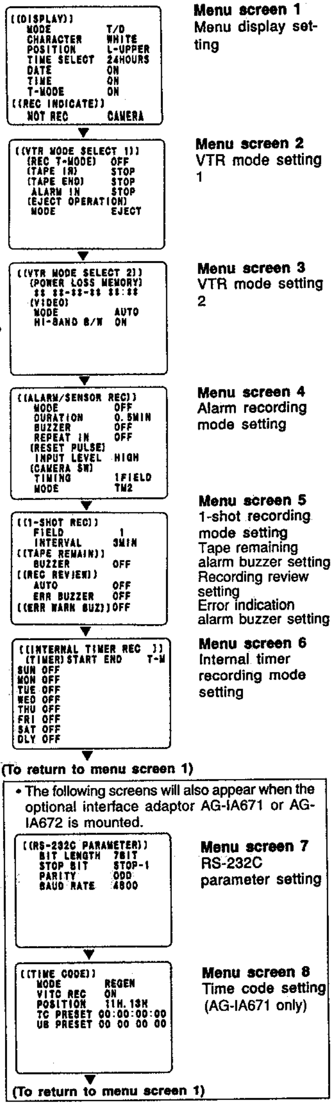
Operation Map

The sequence of steps to be taken from connecting the VTR to playback is described on these pages.

Connections/preparations (see page 63)		• Connect the cameras, monitors, sequential switcher, alarm switch, sensor switch, buzzer, etc. to the VTR as required. • Turn on the power to the VTR and to the units which have been connected to it. • Check that a clear picture from the camera appears on the TV monitor. • Insert the cassette tape.
Time & date setting (see page 34)	PROGRAM MENU OFF TIME ADJ	Set the time and date.
Menu setting (see page 37)	PROGRAM MENU OFF TIME ADJ	Set the menus. (Operation is possible only when in the eject or stop mode and when the recording lock switch is OFF.)
Time mode setting (see page 17)	TIME MODE ▼ ▲	The mode can be set when REC T-MODE on menu screen 3 is set to "OFF."
Recording mode setting (see page 17)	REC MODE ☐	Select one of the following 3 modes. • Regular mode • External timer mode • Internal timer mode
Recording (see page 18)	●REC	Recording starts when this is pressed.
Recording check (see page 17)	REC REVEW	The material just recorded can be checked while the recording is actually in progress.
Playback (see page 30)	REV PLAY ◄ PLAY ►	• Playback • Reverse playback • Search forward • Search reverse • 1-frame forward • 1-frame reverse • Still-picture playback (See page 15)

Menu screens



```
((DISPLAY))
  MODE          T/D
  CHARACTER     WHITE
  POSITION      L-UPPER
  TIME SELECT   24HOURS
  DATE          ON
  TIME          ON
  T-MODE        ON
((REC INDICATE))
  NOT REC       CAMERA
```

Menu screen 1
Menu display setting

```
((VTR MODE SELECT 1))
 (REC T-MODE)   OFF
 (TAPE IN)      STOP
 (TAPE END)     STOP
  ALARM IN      STOP
 (EJECT OPERATION)
  MODE          EJECT
```

Menu screen 2
VTR mode setting 1

```
((VTR MODE SELECT 2))
 (POWER LOSS MEMORY)
  $$ $$-$$-$$ $$:$$
 (VIDEO)
  MODE          AUTO
  HI-BAND B/W   ON
```

Menu screen 3
VTR mode setting 2

```
((ALARM/SENSOR REC))
  MODE          OFF
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

Menu screen 4
Alarm recording mode setting

```
((1-SHOT REC))
  FIELD          1
  INTERVAL      3MIN
((TAPE REMAIN))
  BUZZER        OFF
((REC REVIEW))
  AUTO          OFF
  ERR BUZZER    OFF
((ERR WARN BUZ))OFF
```

Menu screen 5
1-shot recording mode setting
Tape remaining alarm buzzer setting
Recording review setting
Error indication alarm buzzer setting

```
((INTERNAL TIMER REC  ))
 (TIMER)START END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

Menu screen 6
Internal timer recording mode setting

(To return to menu screen 1)

- The following screens will also appear when the optional interface adaptor AG-IA671 or AG-IA672 is mounted.

```
((RS-232C PARAMETER))
   BIT LENGTH   7BIT
   STOP BIT     STOP-1
   PARITY       ODD
   BAUD RATE    4800
```

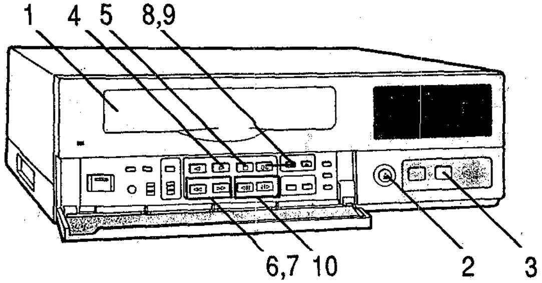
Menu screen 7
RS-232C parameter setting

```
((TIME CODE))
   MODE         REGEN
   VITC REC     ON
   POSITION     11H.13H
   TC PRESET 00:00:00:00
   UB PRESET 00 00 00 00
```

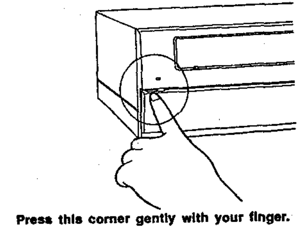
Menu screen 8
Time code setting
(AG-IA671 only)

(To return to menu screen 1)

Basic First Steps For Operation



■ Opening the sub panel

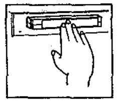


Press this corner gently with your finger.

When starting to use the VTR, make sure that you have acquainted yourself with at least these basic operations.

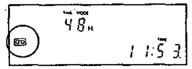
■ Installing the cassette

1



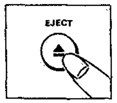
Press the middle part of the cassette.

Do not force it in!



■ Ejecting the cassette

2

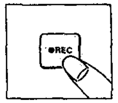


Press this button.

(No operation results unless the control is pressed down firmly.)

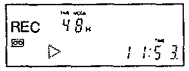
■ Recording

3



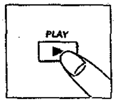
Press this button.

[See Note 1]

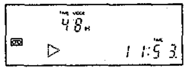


■ Playback

4

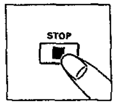


Press this button.



■ Stop

5

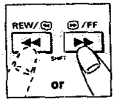


Press this button.

This will stop all tape travel.

■ Fast forwarding/rewinding

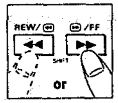
6



Press one of these buttons when the tape is stopped.

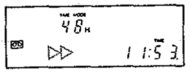
■ Search forward/search reverse

7



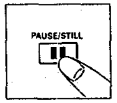
Keep one of these buttons depressed during playback.

[See Note 2]



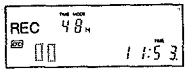
■ Temporarily suspending recording

8



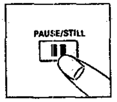
Press this button during recording.

[See Note 3]



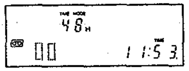
■ Still-picture playback

9



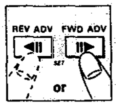
Press this button during playback.

[See Note 3]



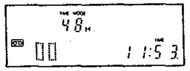
■ Frame advance/reverse playback

10



Press one of these buttons during still-picture playback.

[See Note 3]



NOTES

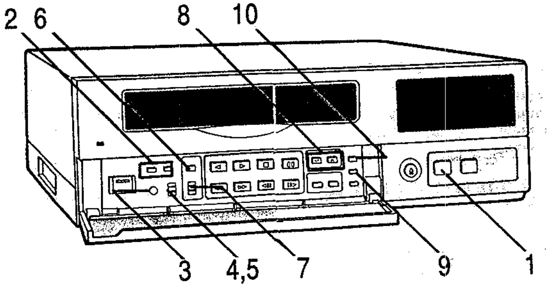
[Note 1]
If the cassette's accidental erasure prevention tab is missing, the cassette is ejected.
(See page 36)

[Note 2]
Continuous search forward or search reverse operations can be initiated by pressing the FF or REW button once if the alarm search mode has been established.
(See page 32)

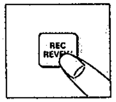
[Note 3]
The pause or still-picture mode gives way to the stop mode when a fixed period of time has elapsed. This is to protect the tape.

[Auto head cleaning function]
Any dirt on the video heads is automatically removed whenever recording or playback is started from the stop mode, whenever the unit is placed in the stop mode from the recording or playback mode so that, as a result, a clear picture is obtained.
Nevertheless, the video heads may become dirty after prolonged use of the VTR, in which case they must be cleaned.

Basic First Steps For Operation
(Continued)



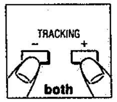
■ Monitoring the recording

1


Press the button during recording.

[See Note 1]

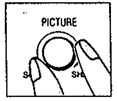
■ Adjusting the tracking

2


Press both buttons together during playback.

If the tracking still cannot be adjusted, press the "+" or "–" button separately. (See page 31)

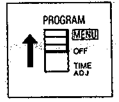
■ Adjusting the picture quality

3


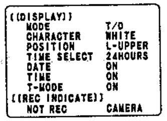
Turn this control (during playback).

(See page 31)

■ Bringing up the menu screen

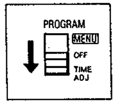
4


Set the switch to MENU when the tape has stopped or when it has been ejected.



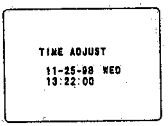
```
((DISPLAY))
   MODE            T/D
   CHARACTER       WHITE
   POSITION        L-UPPER
   TIME SELECT     24HOURS
   DATE            ON
   TIME            ON
   T-MODE          ON
((REC INDICATE))
   NOT REC         CAMERA
```

■ Bringing up the time setting display

5


Set the switch to TIME ADJ when the tape has stopped or when it has been ejected.

- When the switch is set to this position during recording, the time setting screen will be recorded.



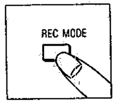
```
TIME ADJUST

 11-25-98 WED
 13:22:00
```

NOTE

[Note 1]
The pictures immediately before the REC REVIEW button was pressed during recording are partially played back, and then operation returns to the recording mode.
(It takes about 3 seconds for the playback picture to appear.)
The cassette mark (⌼) on the display flashes if it was not possible for the proper video level to be obtained after the recording review operation due to dirt on the heads or deterioration of the tape. (See page 71)

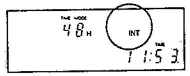
- It is also possible to set the function which automatically carries out the recording review each time the recording starts. (See page 49)

■ Selecting the recording mode

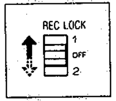
6


Press this button and select the mode before proceeding with the recording.

[See Note 2]



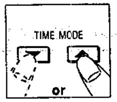
■ Locking the recording

7


Set the switch to "1" or "2" during recording.

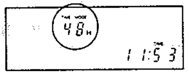
[See Note 3]

■ Selecting the time mode

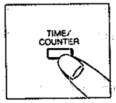
8


Press this button before (or during) recording or playback.

[See Note 4]



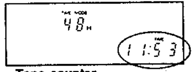
■ Switching between the time, tape counter and repeat count display

9


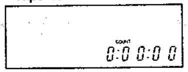
The display is switched each time this button is pressed.

The repeat count is displayed when the TAPE END mode on menu screen 2 has been set to "REPEAT." "1" appears on the display when the cassette tape is replaced. Refer to the table on page 56 for the general guideline as to when the cassette tape is to be replaced.

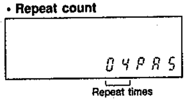
- Time



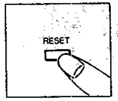
- Tape counter



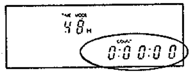
- Repeat count



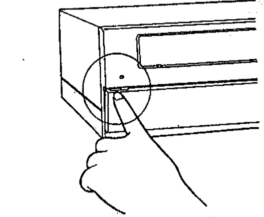
■ Resetting the tape counter

10


Press this button while the counter value is displayed.



■ Opening the sub panel



Press this corner gently with your finger.

NOTES

[Note 2]
The recording mode is set to the EXTERNAL TIMER, INTERNAL TIMER and NO DISPLAY in sequence each time the REC MODE button is pressed.
When the internal timer mode is established, the power is set OFF.
(See page 27)

[Note 3]
When recording is locked, the regular operations can no longer be performed.
1: Recording review only.
OFF: Regular operations can be performed.
2: Recording review, eject only.
(The HOUR METER button always can be operated.)

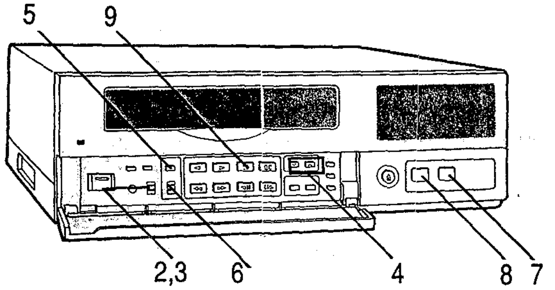
[Note 4]
The time (hour) modes are as follows.

2H mode:	Standard mode (Playback only enabled. A 2H time mode tape which was recorded using another VTR can be played back.)
6H mode:	× 3 speed mode
L18, L24H mode:	Continuous low-speed (linear slow) mode
24 ~ 960H mode:	Intermittent (time lapse) mode
000H mode:	1-SHOT mode
HDR:	High-density recording mode

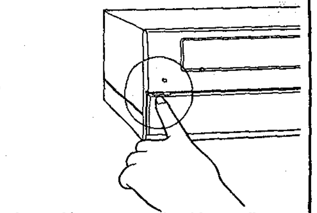
*L18, L24H, 24-960H and 000H modes are HDR mode

Refer to page 42 for more details on the recording time modes.

Recording



■ Opening the sub panel

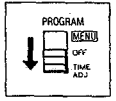


Press this corner gently with your finger.

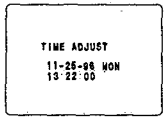
The sequence of steps to be taken from the start of recording to its completion is described on these pages.

1
- **Connect the equipment and prepare the units for operation.** (See page 63)
- **Turn on the power.**
- **Install a cassette with its accidental erasure prevention tab intact.** (See page 36)
  [See Note 1]

2

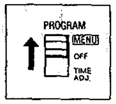


Adjust the time and date.
(See page 34)
[See Note 2]

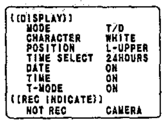


```
TIME ADJUST
 11-25-96 MON
 13:22:00
```

3

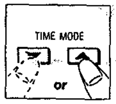


Set the menu.
(See page 37)
[See Note 2]

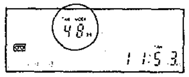


```
((DISPLAY))
   MODE           T/D
   CHARACTER      WHITE
   POSITION       L-UPPER
   TIME SELECT    24HOURS
   DATE           ON
   TIME           ON
   T-MODE         ON
((REC INDICATE))
   NOT REC        CAMERA
```

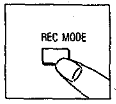
4



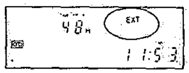
Press these buttons to set the hour mode.
[See Note 3]



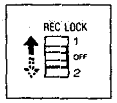
5



Press this button to set the recording mode.
[See Note 4]

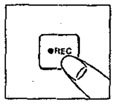


6

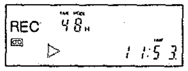


Set the switch to "1" or "2" to lock the recording.

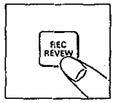
7



Press this button to start the recording.

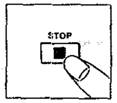


8



The recording can be monitored if this button is pressed while the *recording is in* progress.

9



Press this button to stop the recording.
[See Note 5]

■ Recommended tapes

This time lapse recorder has been designed to yield the high degree of reliability which is required in such applications as monitoring, security and observation. In order to assure this reliability in recording, it is recommended that the following Panasonic tapes be used.
VHS tapes: NV-T30, T60, T90, T120 series

NOTES

[Note 1]
The automatic recording function can be set on menu screen 2.
(See page 42)

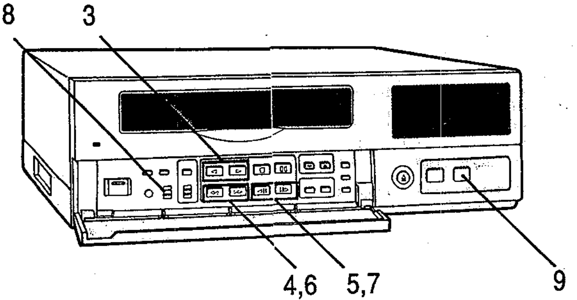
[Note 2]
Upon completion of the time and menu setting, be sure to set the PROGRAM switch to "OFF."

[Note 3]
When "REC T-MODE" on menu screen 2 is at any setting other than "OFF," the time (hour) mode will be set to the setting which was set by "REC T-MODE."
(See page 42)

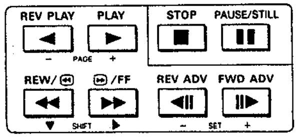
[Note 4]
When the "internal timer recording" mode is selected, the power will be turned off.
(See page 27)

[Note 5]
If the recording lock switch has been set to a position other than OFF, first return it to the OFF position, and then press the stop button.

Alarm Recording



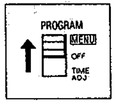
[Menu setting buttons]



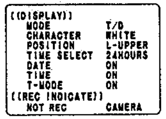
PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

When there is an alarm input during time lapse recording, the alarm recording function changes the time mode to a setting which enables recording to be conducted clearly so that the scene of the emergency will be recorded faithfully.

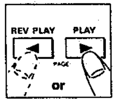
1 **Complete steps 1 to 4 on page 18.**

2


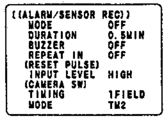
Set this switch to "MENU."



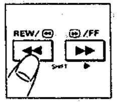
```
((DISPLAY))
  MODE          T/D
  CHARACTER     WHITE
  POSITION      L-UPPER
  TIME SELECT   24HOURS
  DATE          ON
  TIME          ON
  T-MODE        ON
((REC INDICATE))
  NOT REC       CAMERA
```

3


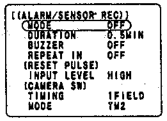
Press one of these buttons to display menu screen 4.



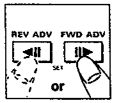
```
((ALARM/SENSOR REC))
  MODE          OFF
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

4


Press this button.

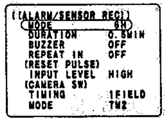


```
((ALARM/SENSOR REC))
  MODE          OFF
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

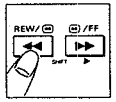
5


Press one of these buttons to select the recording time mode for alarm recording.

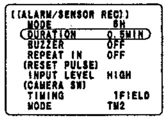
[See Note 1]



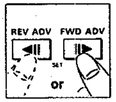
```
((ALARM/SENSOR REC))
  MODE          6H
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

6


Press this button.

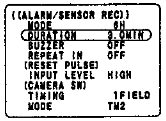


```
((ALARM/SENSOR REC))
  MODE          6H
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

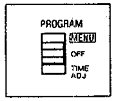
7


Press one of these buttons to select the recording duration.

[See Note 2]

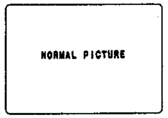


```
((ALARM/SENSOR REC))
  MODE          6H
  DURATION      3.0MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

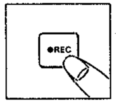
8


Set this switch to OFF.

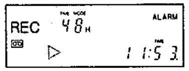
[See Note 3]



```
NORMAL PICTURE
```

9


Press this button.



```
REC  48H        ALARM
      ▷        11:53
```

10 **Recording now commences.**
Refer to page 18 for details on the recording procedure.
(Continued overleaf)

NOTES

[Note 1]
- Set to "OFF" when alarm recording is not going to be performed.
- "ALARM" appears on the display when "MODE" is set to any position other than "OFF."
- The recording time setting options are listed below:
  6-, L18-, L24-, 24-hour, NO CHANGE
  (See page 46)

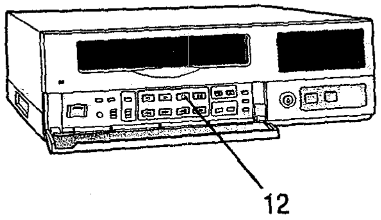
[Note 2]
The "recording duration" is the length of time during which alarm recording is executed. (See page 46)

[Note 3]
The settings made on the menu screens are entered when the PROGRAM switch has been set to "OFF."

[Other notes]
Besides the settings mentioned here, the following can also be set on menu screen 4.
- Buzzer ON/OFF during alarm recording (BUZZER)
- Repeat-in function setting (REPEAT IN)
- Alarm reset pulse level selection (RESET PULSE)
- Camera switchover timing (CAMERA SW)
  (See page 46)

Alarm Recording

(Continued)



11

■ **The alarm recording mode is established when there is an alarm input.**

Alarm input
↓

Recording	Alarm recording	Recording
	Recording duration	

↑
Faithful recording in the time (hour) mode set

- Once an alarm recording is conducted, "alarm" flashes on the display. Pressing the stop button turns off the display.

Sensor (emergency) recording mode

- Even if the power is off or operation has stopped, sensor (emergency) recording is started as soon as there is an alarm input.
- What happens in the sensor recording and the alarm recording mode is the same.
- The sensor recording function does not work when "MODE" on menu screen 4 is set to "OFF."

Alarm input
↓

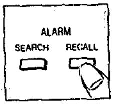
Power OFF/operation stopped/internal timer on standby	Sensor recording	Power OFF/operation stopped/internal timer on standby

↑
Recording is started with the settings made on menu screen 4.

Alarm memory recall function

This function stores in the memory the dates and number of times that alarm recording has been activated.

Right side of sub panel



When this is pressed, the alarm list is displayed.

- Data for the last alarm recordings (up to 8) is stored.
- The alarm count extends up to 99, after which the count returns to 00.
- The memory can be cleared by pressing the RESET button while the alarm recall screen is displayed.
- The display is cleared automatically after 30 seconds have elapsed. It is also cleared by pressing the ALARM RECALL button again.
- As with alarm recording, sensor recording data is also stored in the alarm memory.

Monitor

```
[[ALARM RECALL MEMORY]]
NO.      DATE       TIME
09    10-22-98      7:00
08    10-09-98      6:00
07    10-01-98      7:00
06     9-28-98     12:00
05     9-21-98      9:00
04     9-12-98     10:00
03     8-13-98     17:00
02     8-11-98     23:00
```

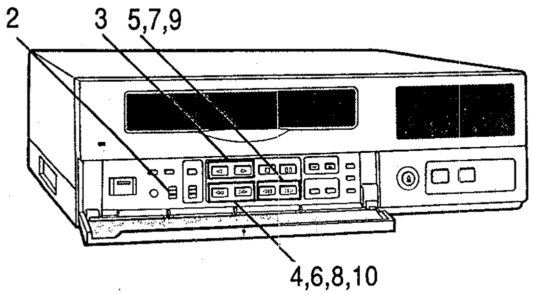
Alarm number:
The data on the most recent alarm recordings appears in chronological order with the test at the top.

Dates and times of alarm inputs

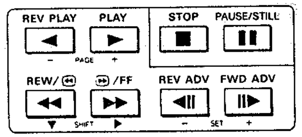
■ The following appears on the screen when there has been no alarm recording or when the alarm memory has been reset.

```
[[ALARM RECALL MEMORY]]
NO.      DATE       TIME
**    **-**-**     **:**
**    **-**-**     **:**
**    **-**-**     **:**
```

Internal Timer Recording



[Menu setting buttons]

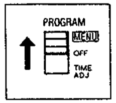


PAGE (–) button:	**Page down**
PAGE (+) button:	**Page up**
SHIFT (▼) button:	**Move to item below**
SHIFT (▶) button:	**Move to item on the right**
SET (–) button:	**Change item (decrement numerical value)**
SET (+) button:	**Change item (increment numerical value)**

Using the internal timer, recording can be made to start and finish at any time settings.

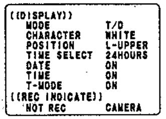
1 **Complete steps 1 and 2 on page 18.**

2



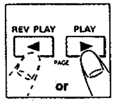
Set this switch to "MENU."

[See Note 1]

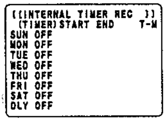


```
((DISPLAY))
   MODE          T/D
   CHARACTER     WHITE
   POSITION      L-UPPER
   TIME SELECT   24HOURS
   DATE          ON
   TIME          ON
   T-MODE        ON
((REC INDICATE))
   NOT REC       CAMERA
```

3



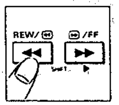
Press one of these buttons to display menu screen 6.



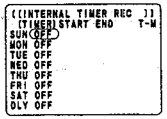
```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

↓ This is the first step for the weekly timer setting.

4

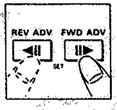


Press this button.



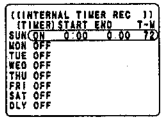
```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

5



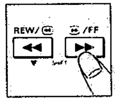
Press one of these buttons to select "ON."

[See Note 2]



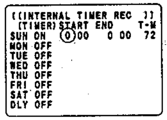
```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON    0:00   0 00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

6



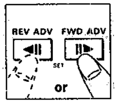
Press this button.

This sets the start time.

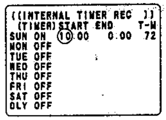


```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON    0 00   0 00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

7

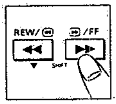


Press one of these buttons to set the "hours" of the start time.

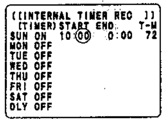


```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON   10 00   0:00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

8

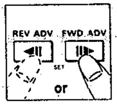


Press this button.

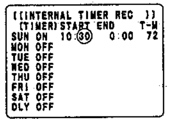


```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON   10 00   0:00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

9

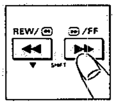


Press one of these buttons to set the "minutes" of the start time.

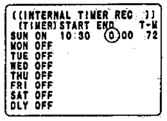


```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON   10:30   0:00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

10



Press this button. This sets the end time.



```
((INTERNAL TIMER REC  ))
 (TIMER) START  END    T-M
SUN ON   10:30   0 00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

↓ (Continued overleaf)

NOTES

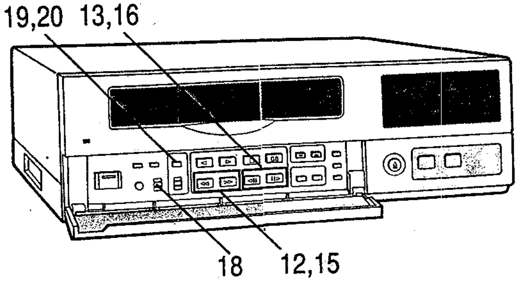
[Note 1]
The menu screen can be displayed only when the VTR is in the stop or eject mode.

[Note 2]
Keep the PROGRAM switch at the "OFF" position if timer recording is not going to be set.

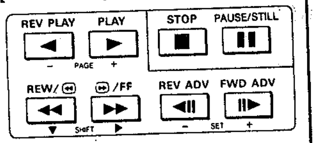
[Other notes]

- Be sure to complete the date/time setting stage before setting the internal timer.
- Since it takes some moments for recording to start, set the start time for timer recording one minute earlier.

Internal Timer Recording
(Continued)


19,20
13,16
18
12,15

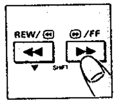
[Menu setting buttons]


REV PLAY
PLAY
STOP
PAUSE/STILL
– PAGE +
REW/⊖
⊕/FF
REV ADV
FWD ADV
▼ SHIFT ▶
– SET +

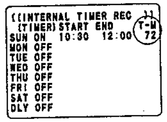
PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

---

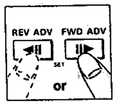
11 Set the "hours" and "minutes" of the end time in the same way as for the start time (steps 7 to 9).

12 
REW/⊖
⊕/FF
▼ SHIFT

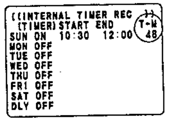
Press this button.



```
((INTERNAL TIMER REC  ))
 (TIMER)START END    T-M
SUN ON  10:30  12:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

13 
REV ADV
FWD ADV
SET
or

Press one of these buttons to select the recording hour mode. [See Note 1]

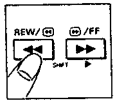


```
((INTERNAL TIMER REC  ))
 (TIMER)START END    T-M
SUN ON  10:30  12:00  48
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

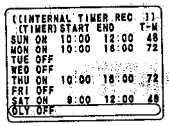
14 Repeat steps 4 to 13 to set the recording start and end times and the recording time mode (in hours) for each day of the week.

↑ This is the last step for the weekly timer setting. [See Note 2]

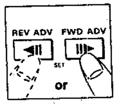
↓ This is the first step for the daily timer setting. [See Note 2]

15 
REW/⊖
⊕/FF
SHIFT ▶

Press this button.

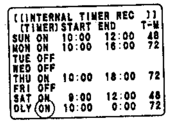


```
((INTERNAL TIMER REC  ))
 (TIMER)START END    T-M
SUN ON  10:00  12:00  48
MON ON  10:00  16:00  72
TUE OFF
WED OFF
THU ON  10:00  18:00  72
FRI OFF
SAT ON   9:00  12:00  48
DLY OFF
```

16 
REV ADV
FWD ADV
SET
or

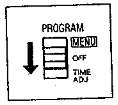
Press one of these buttons to select "ON."

[See Note 3]



```
((INTERNAL TIMER REC  ))
 (TIMER)START END    T-M
SUN ON  10:00  12:00  48
MON ON  10:00  16:00  72
TUE OFF
WED OFF
THU ON  10:00  18:00  72
FRI OFF
SAT ON   9:00  12:00  48
DLY ON  10:00   0:00  72
```

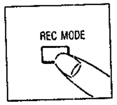
17 Repeat steps 7 to 12 to set the recording start and end times and the recording time mode (in hours) in the same way as for the weekly timer.

18 
PROGRAM
MENU
OFF
TIME ADJ

Set this switch to the "OFF" position.

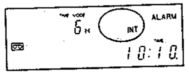
[See Note 4]

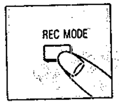
NORMAL PICTURE

19 

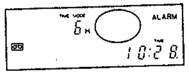
Press this switch to display "INT".

[See Note 5]


TAPE MODE
6 H
INT
ALARM
TIME
10:10

20 

To release the mode, press this switch and turn off the "INT" display.


TAPE MODE
6 H
ALARM
TIME
10:28

NOTES

[Note 1]
The weekly timer takes priority in terms of the recording time mode (in hours) when daily timer and weekly timer settings overlap the same time zones. (See page 51)

[Note 2]
Weekly (day of the week) timer
The timer can be set for recording at different times each day of the week.

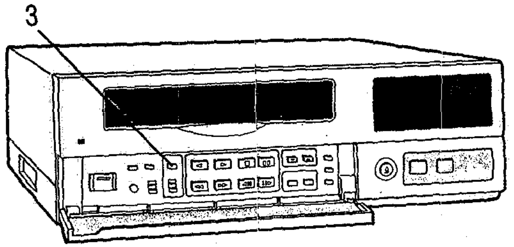
Daily (every day) timer
The timer can be set for recording at the same time every day.

[Note 3]
When the daily timer is not going to be set, press one of the buttons in step 16 and set "OFF."

[Note 4]
The settings made on the menu screen are entered when the PROGRAM switch is returned to the "OFF" position. Once set and entered, the settings are retained semi-permanently.

[Note 5]
When the recording mode is set to "INT," the power is switched off. At the set time, recording will start automatically.

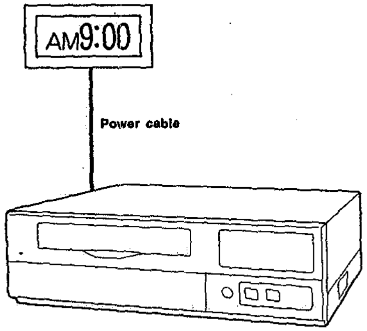
External Timer Recording



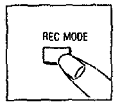
By connecting an externa timer to the VTR, the power to the VTR can be switched ON and OFF to perform timer recordings.

1 **Complete step 1 to 4 on page 18.**

2 **Connect the external timer.**

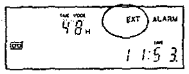


■ Leave the VTR's power on until the setting procedure is completed.

3 

Press this button to display "EXT."

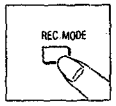
[See Note 1]



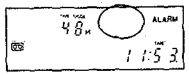
4 **Set the external timer.**

[See Note 2]

5 **Recording starts at the time set by the external timer.**

6 

To release the mode, press this button with power supplied to the VTR and clear the "EXT" display.

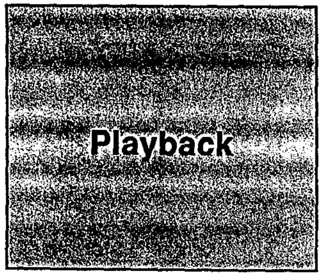


NOTES

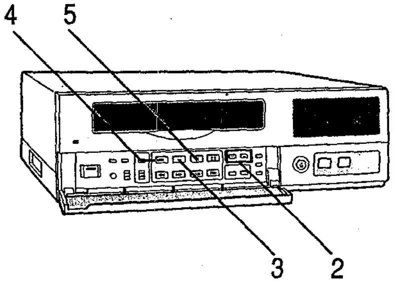
[Note 1]
When a cassette has not been installed or when the accidental erasure prevention tab on the cassette installed has been broken out, the buzzer sounds and "EXT" flashes.

[Note 2]
For details on how to set the external timer, refer to the operating instructions accompanying the timer.

[Other notes]
In the external timer recording mode, sensor recording will not start even with an alarm input if the VTR's main power is OFF.



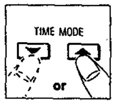
Playback



This operation visually displays what has been recorded.

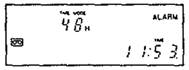
1
- **Complete the connections and ready the units connected for operation.** (See page 63)
- **Turn on the power.**
- **Install a prerecorded cassette.**

2

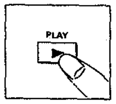


Press one of these buttons to select the time (hour) mode.

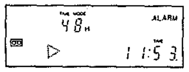
[See the section on the time modes on the right-hand page.]



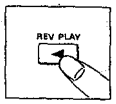
3



Press this button for regular playback.

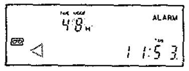


4

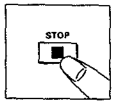


Press this button for reverse playback.

Reverse playback of 1-shot recording is not possible.



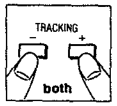
5



Press this button to stop playback.

Tracking adjustment

Adjust the tracking if noise similar to that shown below appears on the playback picture.



- ■ This VTR comes with an auto tracking function to obviate the need to adjust the tracking under normal circumstances. However, should noise similar to that shown on the right appear, re-adjust the tracking.
- ■ Press the "+" and "−" buttons at the same time. If noise still appears, press the "+" and "−" buttons separately.

Picture quality adjustment

When adjusting the playback picture:	■ Turning the PICTURE control clockwise yields a sharply defined picture. ■ Turning the PICTURE control counterclockwise yields a softly defined picture.
If the image shakes slightly in the vertical direction during still-picture playback:	■ Use a screwdriver or some other implement to turn and adjust the vertical hold control on the left side panel. Do not touch it under normal circumstances.

Quasi-V

When playing a tape in other than the 2H or 6H mode, the Quasi-V is turned ON or OFF with the FWD ADV (+) button and the amount of dancing by the picture can be reduced. Moreover, playing back a tape in a system featuring a frame switcher enables the appearance of the pictures of other cameras to be reduced.

When Quasi-V is turned on, ▯▷ is displayed as the operation mode indication.

When Quasi-V is turned off, ▷ is displayed as the operation mode indication.

- If recording is performed in the 6H mode with Quasi-V turned off, playback is possible in the L18H and L24H modes. However, the picture will be distoreted. This is normal and not indicative of malfunctioning.

Time modes

■ Bear in mind the following points when playing back an intermittently recorded tape in the same time mode.
- The picture may shake slightly in the lateral direction but this is not indicative of malfunctioning.
- There may be some slight distortion at the top of the picture but this is not indicative of malfunctioning.
- The picture may dance in any of the L18 and L24 modes. This is normal and not indicative of malfunctioning.
- The sound is not reproduced perfectly. This is normal and not indicative of malfunctioning.

■ The time mode in which the' tape can be played back depends on the time mode used for the recording.

Playback time mode Recording time mode	2H	6H
2H (Recording made using another VTR)	Playback possible	Playback not possible
6H, HDR (L18H, L24H, 24H to 960H)	Playback not possible	Playback possible

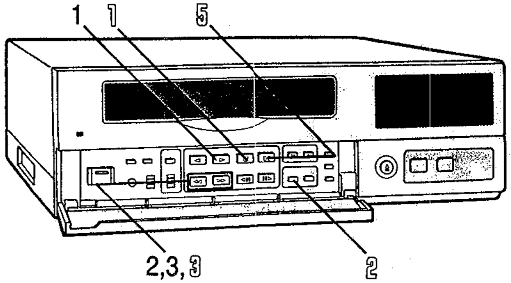
■ When the 2H time mode was used for the recorded tape, the 2H mode is automatically selected for playback; when the 6H mode was used, the 6H mode is automatically selected.
A tape which was recorded in the 2H time mode can only be played back in the 2H time mode.

■ Noise may appear on the screen during still-picture playback or frame-by-frame playback in the linear slow mode or time lapse mode. This is normal and not indicative of malfunctioning.

Other notes

- ■ No sound will be heard during reverse playback.
- ■ Reverse playback is not possible with the tape recorded in the 1-shot recording mode.
- ■ If, when the sound was recorded, the mode in which the sound was recorded differs from the mode in which it is played back, the pitch of the sound will also change.
- ■ The picture may dance while the tape is being played back in any L (linear slow) mode. This is normal and not indicative of a failure.
- ■ Although a great deal of noise will appear on the screen when playing back in the linear slow mode a tape which was recorded in the 6H mode, this is normal and not indicative of a failure.
- ■ When the tape recorded on another VTR is played back on the HDR mode, noise can be appeared even though the tracking is adjusted, but this is not the malfunction.

Search Operations

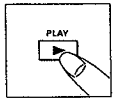


These operations are for initiating search playback, alarm search playback and memory stop.

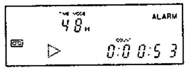
Press the TIME/COUNT button to set the tape counter display. (See page 17.)

■ Search playback (search forward/search reverse)

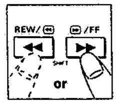
1



Press this button to start playback.

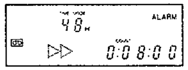


2

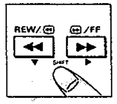


Keep one of these buttons depressed.

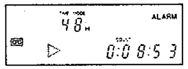
[See Note 1]



3



Release the button to return to regular playback.

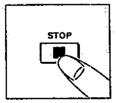


■ To continue the search operation, establish the alarm search mode. (See right-hand page)

- If the fast forward or rewind button is pressed during playback, the search operation is performed continuously.
- When the play button is pressed again, operation returns to regular playback.

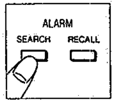
■ Alarm search/memory stop procedure

1



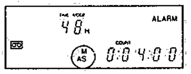
Press this button and set the VTR to the stop mode.

2

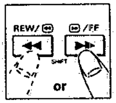


Press this button to display "AS" or "M."

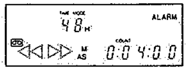
[See Note 2]



3



Press one of these buttons to fast forward or rewind the tape.



4

Alarm search

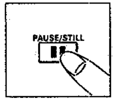
■ The first alarm recorded section on the tape is searched in the direction corresponding to the button pressed, and the VTR is set to the still-picture playback mode.
[See Note 3]

Memory stop

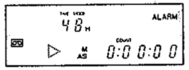
■ The tape stops near at the counter "0" position.

5

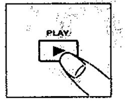
Alarm search



Press this button to play back the section.



Memory stop



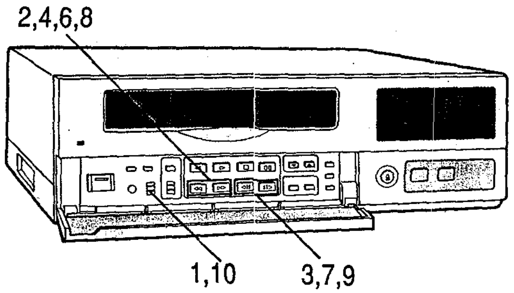
NOTES

[Note 1]
When the REW button is pressed during search playback, the tape is played back in the reverse direction at high speed; when the FF button is pressed during search playback, it is played back in the forward direction at high speed.

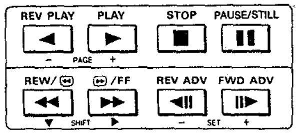
[Note 2]
To release the alarm search/ memory stop mode, press the ALARM SEARCH button againg and clear "AS" or "M" from the display.
AS:Alarm search mode
M:Memory stop mode

[Note 3]
Only an alarm recorded section which was recorded in the 6H mode can be searched using the alarm search function.

Time & Date Setting


2,4,6,8
1,10
3,7,9

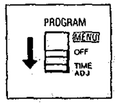
[Time setting buttons]


REV PLAY
PLAY
STOP
PAUSE/STILL
– PAGE +
REW/
/FF
REV ADV
FWD ADV
SHIFT
– SET +

SHIFT (▼) button: **Move to item**
SHIFT (▶) button: **Move to item**
SET (–) button: **Change item (decrement numerical value)**
SET (+) button: **Change item (increment numerical value)**

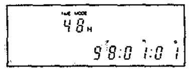
This section describes how the time and date are set.

1

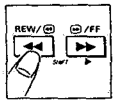

PROGRAM
MENU
OFF
TIME ADJ

Set this switch to "TIME ADJ."

[See Notes 1 and 2]
[See Note 3 to adjust the time earsily.]

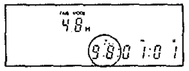


2

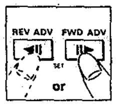

REW/
/FF
SHIFT

Press this button.

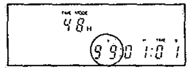
"Year" flashes.



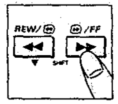
3


REV ADV
FWD ADV
SET
or

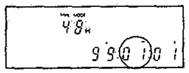
Press one of these buttons to set the number for the year.



4

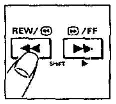

REW/
/FF
SHIFT

Press this button.



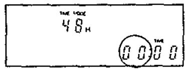
5 **Repeat steps 3 and 4 to set the month and then the day.**

6

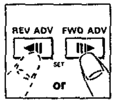

REW/
/FF
SHIFT

Press this button after the date (year/month/day) has been set.

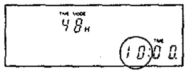
[See Note 3]



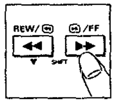
7


REV ADV
FWD ADV
SET
or

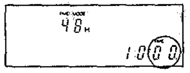
Press one of these buttons to set the "hours."



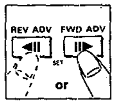
8


REW/
/FF
SHIFT

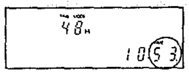
Press this button once.



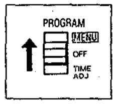
9


REV ADV
FWD ADV
SET
or

Press one of these buttons to set the "minutes."

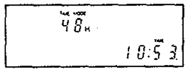


10


PROGRAM
MENU
OFF
TIME ADJ

Set this switch to "OFF."

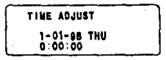
[See Note 4]



NOTES

[Note 1]
If the time is set during recording, the screen on which the time was set will be recorded.

[Note 2]
The screen appears below on the TV monitor.



TIME ADJUST
1-01-88 THU
0:00:00

[Note 3]
Pressing RESET button resets the time to 00 minutes and 00 seconds within a ±15-minute range.
(Example)
20:13 → 20:00
20:48 → 21:00
20:35 → 20:35

[Note 4]
The time starts elapsing from the moment that step 10 is performed. The time can be set accurately if the switch is set to "OFF" as soon as the time signal is heard.

[Other notes]

- The maximum monthly time error is 60 seconds.
- The time and date data will be retained in the event of a power failure provided that it does not last longer than one month. (For the data to be retained, power must have been supplied for at least 40 hours.)
- Adjustment for leap years is automatic.

Operating Precautions

Operating precautions

- If the PAUSE/STILL button is pressed during recording in any time mode from 6H to L24H, the tape will run in the reverse direction for about 3 seconds before stopping.
  When the same button is pressed again, the tape will run for about 3 seconds before recording is resumed.

- Time lapse recording is performed in the 24H or longer recording time mode. By omitting frames while recording the pictures, it is possible to record over long periods of time. However, since the picture is not continuous, the sound cannot be recorded.
- When the recording time mode has been set to any position other than "OFF" on menu screen 2, it cannot be changed using the TIME MODE button on the sub panel during recording. When it has been set to "OFF," the time mode can be changed even during recording using the TIME MODE button on the sub panel.

- When the power is restored after a power failure and power is again supplied to the VTR, the power loss memory screen shown below will appear on the monitor screen for 15 seconds.

```
POWER LOSS    05 10-31-98
                  17:42
```

- The TIME MODE button does not work during alarm recording.

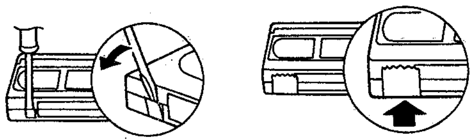
- When the REC button is pressed during still-picture playback, the VTR is set to the recording pause mode, and the E-E picture appears on the monitor.

- If frame advance and frame reverse operations are repeated many times in the same place on the tape, noise may appear. It will disappear when frame advance or frame reverse is continued.

Accidental erasure prevention tab

- Valuable recordings can be protected from accidental erasure by breaking out the tab on the cassette.

- To re-record over a tape in a cassette whose tab has been broken out, stick a double layer of cellophane tape over the tab opening.



Break out the tab in the direction of the arrow.

Menu Screens

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Menu Screen 3 (VTR Mode Settings 2) 44
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■ Menu Screens Appearing Only When Optional
Interface Adaptor AG-IA671 or AG-IA672 Is Mounted

Menu Screen 7 (RS-232C Parameter Settings) 52
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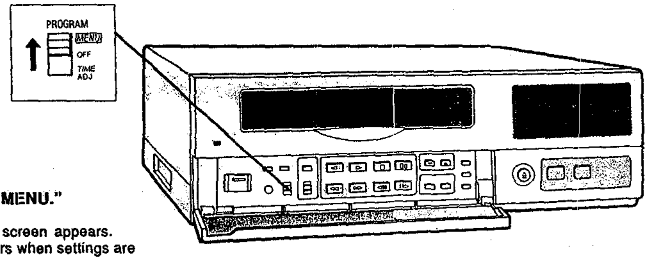
Checkpoints For Menu Setting 56

Menu Screens

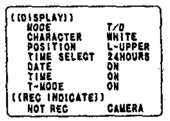
The VTR's many functions can be set on-screen.



Set the switch to "MENU."

- The previous setting screen appears.
- Menu screen 1 appears when settings are to be performed for the first time.

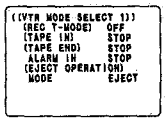
■ Menu screen 1 (screen display settings)



```
((DISPLAY))
   MODE           T/D
   CHARACTER      WHITE
   POSITION       L-UPPER
   TIME SELECT    24HOURS
   DATE           ON
   TIME           ON
   T-MODE         ON
((REC INDICATE))
   NOT REC        CAMERA
```

The information displayed on the TV monitor is set on this screen.

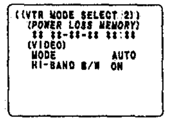
■ Menu screen 2 (VTR mode settings 1)



```
((VTR MODE SELECT 1))
  (REC T-MODE)   OFF
  (TAPE IN)      STOP
  (TAPE END)     STOP
   ALARM IN      STOP
  (EJECT OPERATION)
   MODE          EJECT
```

- Recording time mode setting
- Setting for operation when cassette is installed
- Tape-end operation settings
- Eject operation setting

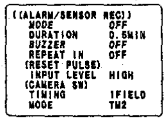
■ Menu screen 3 (VTR mode settings 2)



```
((VTR MODE SELECT 2))
   (POWER LOSS MEMORY)
    ** **-**-** **:**
   (VIDEO)
    MODE           AUTO
    HI-BAND B/W    ON
```

- Power loss memory display
- Video signal selection
- Recording system selection

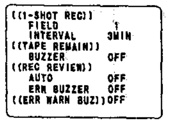
■ Menu screen 4 (alarm recording mode settings)



```
((ALARM/SENSOR REC))
   MODE           OFF
   DURATION       0.5MIN
   BUZZER         OFF
   REPEAT IN      OFF
  (RESET PULSE)
   INPUT LEVEL    HIGH
  (CAMERA SW)
   TIMING         1FIELD
   MODE           TM2
```

- Alarm recording mode settings
- Reset pulse selection
- Camera switch setting

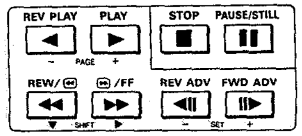
■ Menu screen 5 (1-shot recording mode settings)



```
((1-SHOT REC))
   FIELD           1
   INTERVAL       3MIN
((TAPE REMAIN))
   BUZZER         OFF
((REC REVIEW))
   AUTO           OFF
   ERR BUZZER     OFF
((ERR WARN BUZ))OFF
```

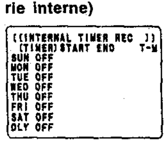
- 1-shot recording mode setting
- Tape remaining alarm buzzer setting
- Recording review setting
- Error indication alarm buzzer setting

[Touches de réglage des menus]



Touche de défilement des pages de menu (–):	Page précédente
Touche de défilement des pages de menu (+):	Page suivante
Touche de décalage (▼):	Déplace le curseur sur la ligne suivante
Touche de décalage (▶):	Déplace le curseur sur la sélection à droite
Touche de réglage (–)	Change la sélection (la valeur numérique diminue d'un incrément)
Touche de réglage (+)	Change la sélection (la valeur numérique augmente d'un incrément)

■ Menu 6 (Réglages du mode d'enregistrement par minuterie interne)



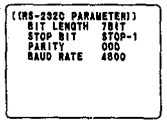
```
((INTERNAL TIMER REC  ))
 (TIMER)START END     T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

- Réglages de la minuterie quotidienne
- Réglages de la minuterie hebdomadaire

■ Les menus suivants sont affichés si l'adaptateur interface AG-IA671 ou AG-IA672 est raccordé.

(Voir page 77)

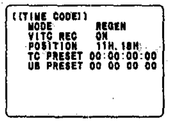
■ Menu 7 (Réglages des paramètres RS-232C) (AG-IA671 et AG-IA672)



```
((RS-232C PARAMETER))
   BIT LENGTH   7BIT
   STOP BIT     STOP-1
   PARITY       ODD
   BAUD RATE    4800
```

- Réglages des paramètres RS-232C

■ Menu 8 (Réglages du signal de base de temps) (AG-IA671 seulement)



```
((TIME CODE))
   MODE         REGEN
   VITC REC     ON
   POSITION     11H.18H
   TC PRESET 00:00:00:00
   UB PRESET 00 00 00 00
```

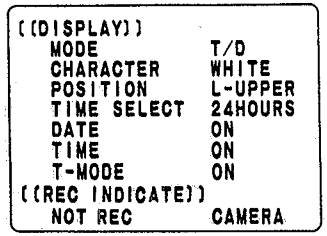
- Réglages du signal de base de temps

Remarques

- Les menus ne peuvent être affichés que si le magnétoscope est en mode arrêt ou éjection.
- Méthode à suivre pour effectuer les réglages des menus

1) Régler le sélecteur de programmation à "MENU".
2) Utiliser les touches "+" et "–" pour sélectionner le menu désiré. La page qui suit la dernière page est la première page; la page qui précède la première page est la dernière page.
3) La première ligne clignote lorsqu'une pression est exercée sur la touche décalage (▼).
4) Sélectionner les réglages désirés à l'aide des touches décalage (▼) et (▶).
5) Utiliser les touches "+" et "–" pour effectuer les réglages.
6) Une fois les réglages complétés, replacer le sélecteur de programmation à "OFF". Les réglages choisis seront alors sauvegardés.

Menu 1
(Réglages de l'affichage à l'écran)



```
[(DISPLAY)]
   MODE           T/D
   CHARACTER      WHITE
   POSITION       L-UPPER
   TIME SELECT    24HOURS
   DATE           ON
   TIME           ON
   T-MODE         ON
[(REC INDICATE)]
   NOT REC        CAMERA
```

Ce menu permet d'effectuer les réglages concernant les informations affichées à l'écran.

■ Sélection du mode d'affichage

1

Sélectionner le contenu de l'affichage normal.

T/D: Affichage de l'heure et de la date
LAP: Affichage du temps d'utilisation
PAGE: Affichage du nombre de pages
[Voir remarque 1] (N'apparaît que si le mode de temps sélectionné est "000H".)

■ Sélection du type de caractères

2

Sélectionner le type des caractères affichés.

WHITE: Caractères blancs = ABCD
BLACK: Caractères en relief = ABCD

■ Sélection de la position des caractères*

3

Sélectionner la position des caractères affichés.

L-UPPER: coin supérieur gauche
R-UPPER: coin supérieur droit
L-BOTTOM: coin inférieur gauche
R-BOTTOM: coin inférieur droit
CENTER: au centre

■ Sélection du mode horaire affiché

4
TIME SELECT

Sélectionner le mode horaire selon lequel l'heure est affichée, soit le système 24 heures, ou le système a.m./p.m.

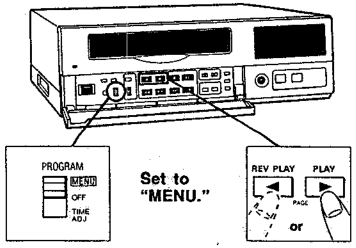
24 HOURS: système de 24 heures = 22:10:45
AM/PM: système a.m./p.m. = 10:10:45P

■ Affichage ou non-affichage de la date

5

Sélectionner l'affichage ou le non-affichage de la date.

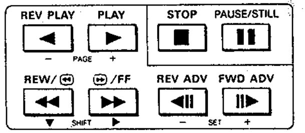
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



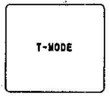
PAGE (–) button:	**Page down**
PAGE (+) button:	**Page up**
SHIFT (▼) button:	**Move to item below**
SHIFT (▶) button:	**Move to item on the right**
SET (–) button:	**Change item (decrement numerical value)**
SET (+) button:	**Change item (increment numerical value)**

■ Time display ON/OFF

6

Set the time display ON or OFF.

■ Time mode and alarm count displays ON/OFF

7 

Set the time mode and alarm count displays ON or OFF.

■ Selecting recording screen

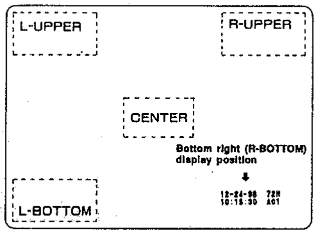
8
[(REC INDICATE)]
NOT REC

This function allows selection of the indications displayed in other than the recording mode.

CAMERA: Camera input signal
BLUE: Blue signal displayed in other than the recording mode.

■ Fine adjustment of the display position

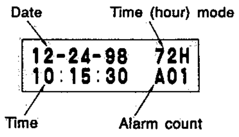
Press the tracking (+, –) buttons when the tape is stopped or has been ejected from the unit. Pressing the + button moves the display position to the right, and pressing – moves it downward. Once the display position has moved all the way to the right or downward, movement to the left or upward begins.
Pressing the + and – buttons at the same time causes the display position to shift immediately to the preset position defined by the menu settings.



TV monitor

NOTES

[Note 1]
Time and date display screen



Lap time display screen
The total recording time starting from the point in time when recording commenced is indicated in a second increments regardless of the present time. (The recording time is not incremented in the recording pause mode.)

`LAP 0:00:00`

When the RESET button is pressed, the lap time display can be reset to "0:00:00".

Page count display screen
During 1-shot recording, each frame recorded counts as a page, and the total number of pages (frames) is displayed on this screen. (For details on 1-shot recording, see pages 48, 58.)

`999999`

When the RESET button is pressed, the page count display can be reset to "0."

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 2
(VTR mode settings (1))

```
[[VTR MODE SELECT 1]]
 [REC T-MODE]    OFF
 [TAPE IN]       STOP
 [TAPE END]      STOP
  ALARM IN       STOP
 [EJECT OPERATION]
  MODE           EJECT
```

The VTR mode settings are performed on this screen.

■ Recording time mode selection

1 REC T-MODE

The recording time mode is set.
When the recording is started, the unit is always placed in the time mode which was set. (See page 56)

OFF:	The time mode can be set as desired using the time mode button on the VTR's sub panel. The mode can be changed even during recording.
6H:	6-hour mode (compatible with the × 3 speed mode of ordinary VTRs).
L18H:	18-hour mode (HDR linear slow recording)
L24H:	24-hour mode (HDR linear slow recording)
24H:	24-hour mode (HDR time lapse recording)
48H:	48-hour mode (HDR time lapse recording)
72H:	72-hour mode (HDR time lapse recording)
96H:	96-hour mode (HDR time lapse recording)
120H:	120-hour mode (HDR time lapse recording)
180H:	180-hour mode (HDR time lapse recording)
240H:	240-hour mode (HDR time lapse recording)
480H:	480-hour mode (HDR time lapse recording)
960H:	960-hour mode (HDR time lapse recording)
000H:	1-shot recording mode (see pages 48, 58).

[See Notes 1 and 2]

■ Sound cannnot be recorded in the time lapse recording or 1-shot recording modes.

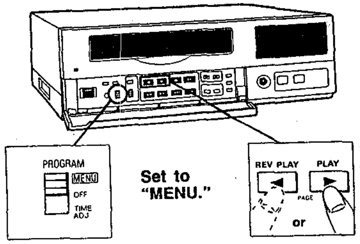
■ Selection of operation when cassette is installed

2 TAPE IN

Select how the VTR is to operate when the cassette is installed.

STOP:	Stop mode
REC:	Automatic recording mode [see Note 3]
REW→REC:	When a cassette tape is loaded, it is first rewound to its beginning and then recording is commenced automatically.

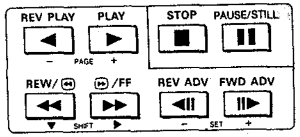
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (–) button:	**Page down**
PAGE (+) button:	**Page up**
SHIFT (▼) button:	**Move to item below**
SHIFT (▶) button:	**Move to item on the right**
SET (–) button:	**Change item (decrement numerical value)**
SET (+) button:	**Change item (increment numerical value)**

■ Selection of operation at tape-end

3 TAPE END MODE

Select how the VTR is to operate at the tape-end.

STOP:	Stop mode
BUZZER:	Stop and the buzzer sounds.
REW:	Automatic rewinding mode [see Note 4]
REPEAT:	Repeat recording mode [see Note 5]

■ Setting auto rewind function release when an alarm input is generated

4 TAPE END ALARM IN

This setting selects whether the auto rewind function is to be released when there is an alarm input while recording is in progress.

STOP:	The auto rewind function is released. The VTR is set to the stop mode at the tape-end.
CONTINUE:	The auto rewind function is not released. The setting for this mode complies with the setting mode in step 3.

■ Selection of cassette EJECT button

5 EJECT OPERATION MODE

Select the operation which is to be performed when the EJECT button is pressed.

EJECT:	The cassette is ejected as soon as the button is pressed.
REW→EJECT:	When the button is pressed, the tape is automatically rewound to its start before the cassette is ejected.

NOTES

[Note 1]
The VTR's time (hour) modes are based on the use of a 120-minute tape. If the cassette used has a different duration, the hour modes will be as follows:

- 90-minute tape: 3/4 of selected time
- 60-minute tape: 1/2 of selected time
- 30-minute tape: 1/4 of selected time

[Note 2]
Linear slow recording
With this kind of recording, the tape travel speed is reduced and the sound is recorded continuously. (Sound can be recorded.)

Time lapse recording
Long-duration recording is possible by recording while advancing the tape intermittently. (Sound cannot be recorded.)

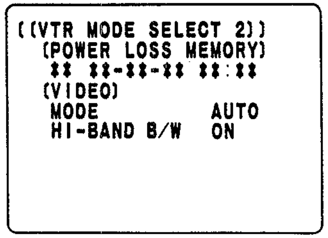
[Note 3]
Automatic recording mode
Recording is started automatically just by installing the cassette.

[Note 4]
Auto rewind function
When the tape reaches its end during recording, it is automatically rewound to its start.

[Note 5]
Auto repeat recording function
When the tape reaches its end during recording, it is automatically rewound to its start and recorded again (or repeatedly).

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 3
(VTR mode settings 2)



```
((VTR MODE SELECT 2))
 (POWER LOSS MEMORY)
 ** **-**-** **:**
 (VIDEO)
  MODE           AUTO
  HI-BAND B/W    ON
```

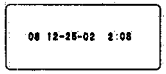
The VTR mode settings are performed on this screen.

■ **Power loss memory display** [See Note 1]

```
(POWER LOSS
    MEMORY)
```

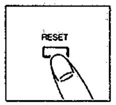
1 This screen displays the power loss memory.

- When the SHIFT (▼) button is pressed so that the number flashes and then the SET "+" or "−" button is pressed, data in the memory on up to the last four power failures is indicated in sequence.
- The power loss memory data can be cleared as below.

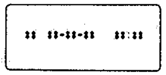


```
08 12-25-02  2:08
```

While flashing



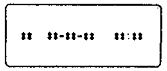
Press this button



```
** **-**-**  **:**
```

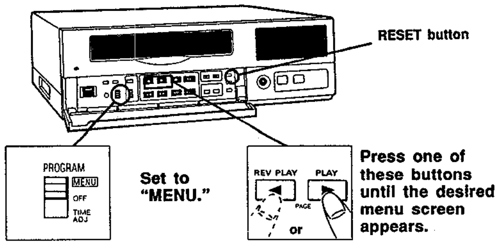
The memory is now cleared.

- The following display appears for the power loss memory data if the time/date has not been set or when there is no data in the memory.



```
** **-**-**  **:**
```

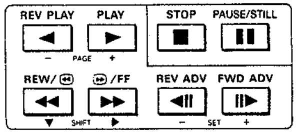
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (−) button:	**Page down**
PAGE (+) button:	**Page up**
SHIFT (▼) button:	**Move to item below**
SHIFT (▶) button:	**Move to item on the right**
SET (−) button:	**Change item (decrement numerical value)**
SET (+) button:	**Change item (increment numerical value)**

■ **Selecting the video signal mode**

```
(VIDEO)
MODE
```

2 Select the operation of the auto color/b&w selector circuit.

AUTO: The circuit is automatically switched to color or black-and-white, whichever corresponds to the input signal. (Regular setting) [See Note 1]

COLOR: For color signal input only

B/W: For black-and-white signal input only [See Note 2]

■ **Setting the HI-BAND recording mode**

```
HI-BAND B/W ON
```

3 Set the HI-BAND recording mode.

ON: Recording proceeds in the high-resolution mode when black-and-white pictures are recorded. [See Note 4]

OFF: The HI-BAND mode is set to OFF.

NOTES

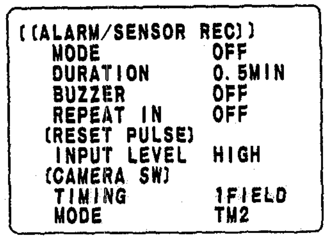
[Note 1]
Power loss memory
When power failures have occurred, the number of occurrences together with their dates and times are counted up to a maximum of 99 times, and the data of the 4 most recent occurrences is stored in the memory.

[Note 2]
Do not mix black-and-white and color signals when supplying them to the video input connectors. This will cause sync fluctuations and generate noise.

[Note 3]
When supplying signals which may cause the circuit to make an error in its automatic identification, set to COLOR for color signals and to B/W for black-and-white signals.
When color signal are supplied with a B/W setting or black-and-white signals are supplied with a COLOR setting, unnatural video signals will be recorded.

[Note 4]
Set HI-BAND B/W to "ON" to play back pictures which were recorded at the HI-BAND B/W "ON" setting. If it is not set to "ON," noise may appear. These pictures cannot be played back properly on a VTR which is not equipped with the HI-BAND B/W facility.

Menu Screen 4
(Alarm recording mode settings)



```
[(ALARM/SENSOR REC)]
  MODE          OFF
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
 (RESET PULSE)
  INPUT LEVEL   HIGH
 (CAMERA SW)
  TIMING        1FIELD
  MODE          TM2
```

The alarm recording mode settings are performed on this screen.

■ Selecting the alarm recording time mode

1 MODE

Select the recording time mode when an alarm input is received.

OFF:	No alarm recording.
6H:	6-hour mode
L18H:	18-hour mode (linear slow)
L24H:	24-hour mode (linear slow)
24H:	24-hour mode (time lapse)
NO CHANGE:	The recording time remains unchanged even if there is an alarm input.

← Tape start — Alarm input ↓ — Tape end →

Recording	Alarm recording mode	Recording

- When there is an alarm input during recording in one of the time lapse modes, the recording time mode switches to the designated mode and the emergency scene is faithfully recorded.

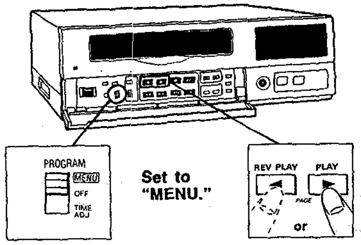
■ Setting the alarm recording duration

2 DURATION

Set how long the alarm recording is to last from the start to the end.

0.5MIN-6.0MIN:	The time can be set to 0.5, 1.0, 1.5, 2.0, 3.0 and 6.0 minutes.
CONTINUE:	Alarm recording continues until the tape-end.
MANUAL:	Alarm recording is performed while the alarm input continues to be received.

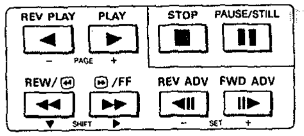
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (−) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (−) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

■ Buzzer ON/OFF

3 BUZZER

Set whether the buzzer is to sound during alarm recording.

OFF: The buzzer does not sound.
ON: The buzzer sounds while alarm recording is in progress.

- Press any function button to release the buzzer.

■ Setting the repeat-in function

4 REPEAT IN

Set whether alarm recording is to proceed when there has been an alarm input while the tape was being rewound automatically in the recording mode.

OFF: No alarm recording.
ACCEPT: Alarm recording [See Note 1]

■ Selecting the alarm reset pulse acceptance level

5 (RESET PULSE) INPUT LEVEL

Select the acceptance level of the alarm reset pulse.

HIGH: The high level is set.
LOW: The low level is set. (See page 68)

■ Setting the timing

6 (CAMERA SW) TIMING

Set the camera switchover timing signal which is to be output by the external sequential switcher during recording.

The cameras are switched every 1-, 2-, 3-, 4-, 5-, 10-, 20-, 30- or 60-fields. [See Note 2]

■ Selecting the camera switchover mode

7 (CAMERA SW) MODE

Select whether the camera switching is to be done in field or frame units. [See Note 3]

TM2: Switching in field units.
TM1: Switching in frame units.

NOTES

[Note 1]
When "ACCEPT" is selected in the repeat-in function, be sure to set to other modes than "OFF" in step 1. If "ACCEPT" is selected when the repeat-in function is "OFF" in step 1, the unit may cause an error.

[Note 2]
When "TM1" has been selected as the camera switchover mode in step 7, the cameras are switched in frame units.
Select "TM1" when the WJ-FS10A frame switcher is connected and "TM2" when the WJ-FS616 frame switcher or any other sequential switcher is connected. (See page 77)

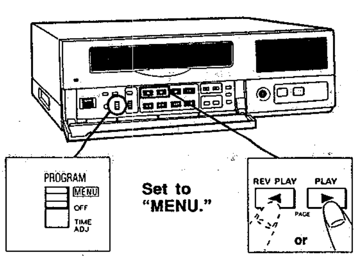
[Note 3]
The alarm recording mode in step 1 must be kept at a position other than "OFF" when "ACCEPT" is to be selected by the repeat-in function. If "ACCEPT" is selected while the mode is set to "OFF," the VTR may not operate properly.

[Other notes]
- The item settings are entered when the PROGRAM switch is returned to the "OFF" position.
- When "MANUAL" is selected for the alarm recording duration, make sure to set the [TAPE END] MODE to "STOP" or "BUZZER".

Menu Screen 5
(1-shot recording mode setting)

```
((1-SHOT REC))
   FIELD           1
   INTERVAL     3MIN
((TAPE REMAIN))
   BUZZER        OFF
((REC REVIEW))
   AUTO          OFF
   ERR BUZZER    OFF
((ERR WARN BUZ))OFF
```

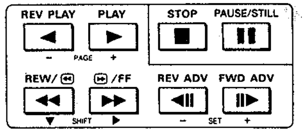
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (–) button:	**Page down**
PAGE (+) button:	**Page up**
SHIFT (▼) button:	**Move to item below**
SHIFT (▶) button:	**Move to item on the right**
SET (–) button:	**Change item (decrement numerical value)**
SET (+) button:	**Change item (increment numerical value)**

The alarm recording mode settings are performed on this screen.

■ Selecting the 1-shot recording time

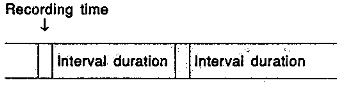
1 FIELD

Select the time for recording one frame in the 1-shot recording mode in field units: 1, 2, 3, 4, 5, 10, 15, 20, 30, 40, 50, 60. [See Note 1]

■ Setting the interval time for 1-shot recording

2 INTERVAL

Set the duration of the intervals for 1-shot recording.
1: 1-shot recording at 1-minute intervals.
2: 1-shot recording at 2-minute intervals.
3: 1-shot recording at 3-minute intervals.



■ Tape remaining alarm buzzer on/off

3 ((TAPE REMAIN)) BUZZER

Set whether a buzzer sounds when the end of the tape approaches in the recording mode.
ON: Buzzer sounds and the indicator "REMAIN" flashes on the display.
OFF: Buzzer does not sound.

■ Recording review on/off

4 ((REC REVIEW)) AUTO

Set whether, when recording is started, recording takes place for a few seconds and then the contents of the recording are checked automatically.
ON: Recording review takes place.
OFF: Recording review does not take place.

■ Recording review error buzzer on/off

5 ((REC REVIEW)) ERR BUZZER

Set whether a buzzer sounds if an error is detected in the recorded content during recording review operation.
ON: Buzzer sounds.
OFF: Buzzer does not sound.

■ Error indication alarm buzzer on/off

6 ((ERR WARN BUZ))

Set whether a buzzer sounds when an error occurs in the VTR.
ON: Buzzer sounds.
OFF: Buzzer does not sound.
An error indication also appears on the monitor screen.

Automatic recording review function

This function conducts the recording review automatically when recording has been commenced from the stop mode.
First, recording is conducted for several seconds, and then what has been recorded is automatically reviewed. If, after a review of the recording, the proper video level was not achieved due to dirt on the heads or tape deterioration, the cassette mark (☐) flashes on the display tube and, at the same time, the automatic head cleaning operation is repeated 3 times.
After this, recording is again conducted for several seconds, and then what has been recorded is automatically reviewed. If the result of the review is acceptable, the cassette mark stops flashing and the recording is commenced.
If the result of the review is not acceptable, the recording is commenced with the cassette mark still flashing. (See page 71)

Function setting method
Turn on the "REC REVIEW" AUTO setting on menu screen 5.

- When the automatic recording review function is set, do not use the unit's 1-shot recording facility.
- Do not press the REC REVIEW button when automatic recording review function is conducting.

NOTES

[Note 1]
The recording interval per field among the fields set is one second.

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 6
(Internal timer recording mode settings)

```
((INTERNAL TIMER REC  ))
 (TIMER) START END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

The internal timer recording modes are set on this screen.

■ Internal timer mode ON/OFF

1
```
(TIMER)
SUN ON
```
Set the internal timer mode ON or OFF.
ON: The internal timer recording mode is established.
OFF: The internal timer recording mode is not established.

■ Setting the timer recording start time

2
```
START
0:00
```
Set the time at which the internal timer recording is to start.

Select the setting items using the SHIFT buttons and set the numerical values using the SET buttons.

■ Setting the timer recording end time

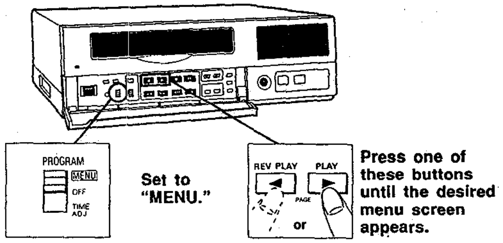
3
```
END
0:00
```
Set the time at which the internal timer recording is to end.

Select the setting items using the shift buttons and set the numerical values using the SET buttons.

■ Setting the recording time mode

4
```
T-M
 72
```
Set the recording time mode for internal timer recording. 6H, L18H, L24H, 24H, 48H, 72H, 96H, 120H, 180H, 240H, 480H, 960H, and 000H.

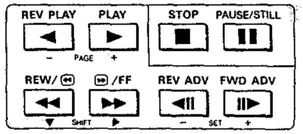
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (–) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (▶) button: Move to item on the right
SET (–) button: Change item (decrement *numerical value*)
SET (+) button: Change item (increment numerical value)

■ Weekly timer recording

The internal timer recording start and end times can be set once a day for each day of the week from Sunday through Saturday.

For each day of the week, set the internal timer ON/OFF mode, recording start and end times, and recording mode.

```
(TIMER)  START  END  T-M
SUN ON    8:00   8:00  72
MON ON   12:00  14:00  72
TUE OFF
WED OFF
THU ON   14:00  23.00  72
FRI OFF
SAT ON   18.00   8.00  48
```

■ Daily timer recording

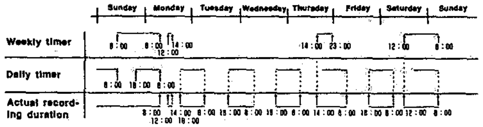
Internal timer recording can be started and ended at the the same preset times every day.

```
DLY ON  18:00   8:00
```

■ Using the weekly and daily timers in combination

```
((INTERNAL TIMER REC  ))
 (TIMER) START  END   T-M
SUN ON    8:00   8:00  72
MON ON   12:00  14:00  72
TUE OFF
WED OFF
THU ON   14:00  23 00  72
FRI OFF
SAT ON   12.00   8 00  48
DLY ON   18 00   8.00  72
```

When the settings are as per the screen shown on the left, the weekly and daily timer recording and the actual recording durations on the tape will be as follows.



■ If the recording times overlap in places between the weekly and daily settings, the daily timer recording time (hour) mode takes precedence.

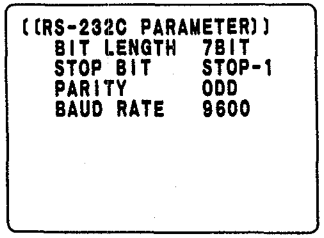
NOTES

[Notes]

- Internal timer recording is not activated if the date and time have not been set.
- The time setting display (24-hour or PM/AM basis) accords with the mode assigned by the time/date setting.
- If the internal timer mode is set "OFF" after the start and end times have been set with the mode "ON", the time setting display will be cleared but will then re-appear when the mode is set back to "ON."
- When the weekly timer and daily timer recording functions are used in combination, the time mode set for the weekly timer recording takes precedence if there should be any overlap between the two time settings.
- The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

■ This screen appears only when the optional AG-IA67[illegible] or AG-IA672 has been installed.

Menu Screen 7
(RS-232C parameter setting)



```
[(RS-232C PARAMETER)]
   BIT LENGTH  7BIT
   STOP BIT    STOP-1
   PARITY      ODD
   BAUD RATE   9600
```

■ Setting the character length

1 **BIT LENGTH**

Set the character length.
7BIT: 7 bits
8BIT: 8 bits

[see Note 1]

■ Setting the stop bit

2 **STOP BIT**

Set the stop bit.
STOP-1: 1 bit
STOP-2: 1 bits

[see Note 2]

■ Setting the parity bit

3 **PARITY**

Set the parity bit
ODD: Odd number
EVEN: Even number
NONE: None

[see Note 3]

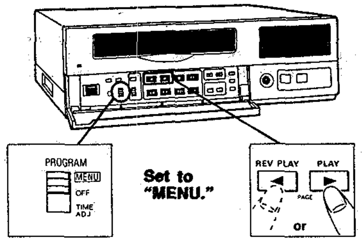
■ Setting the baud rate

4 **BAUD RATE**

Set the baud rate (data transmission speed).
1200: 1200 bits per second
2400: 2400 bits per second
4800: 4800 bits per second
9600: 9600 bits per second

[see Note 4]

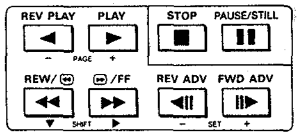
[Displaying the screens]


PROGRAM
MENU
OFF
TIME ADJ
REV PLAY
PLAY
PAGE
or

Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]


REV PLAY
PLAY
STOP
PAUSE/STILL
– PAGE +
REW/
/FF
REV ADV
FWD ADV
▼ SHIFT ▶
– SET +

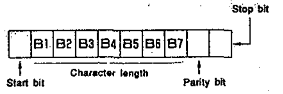
PAGE (–) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (▶) button: Move to item on the right
SET (–) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

■ RS-232C

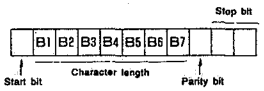
"RS-232C" is an interface standard for data terminals and data communications equipment employing serial binary data exchange as stipulated under the RS-232 EIA standard. Using this RS-232C interface, this VTR can be controlled by a personal computer.

■ Code format

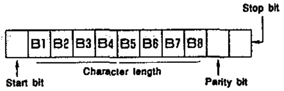
Bit length: 7BIT
Stop bit: STOP-1
Parity: EVEN


Stop bit
B1
B2
B3
B4
B5
B6
B7
Start bit
Character length
Parity bit

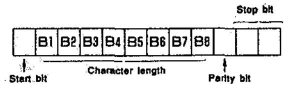
Bit length: 7BIT
Stop bit: STOP-2
Parity: ODD


Stop bit
B1
B2
B3
B4
B5
B6
B7
Start bit
Character length
Parity bit

Bit length: 8BIT
Stop bit: STOP-1
Parity: EVEN


Stop bit
B1
B2
B3
B4
B5
B6
B7
B8
Start bit
Character length
Parity bit

Bit length: 8BIT
Stop bit: STOP-2
Parity: ODD

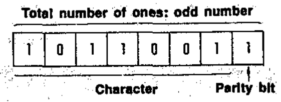

Stop bit
B1
B2
B3
B4
B5
B6
B7
B8
Start bit
Character length
Parity bit

NOTES

[Note 1]
Character (data) length
This is the number of bits that configure the character data.

[Note 2]
Stop bit
Added to each character are the start bit which indicates the start of the data and the stop bit which indicates the end of the data. The start bit is fixed at 1 bit but the stop bit can be set to either 1 or 2 bits.

[Note 3]
Parity bit
The parity bit is added for checking transmission errors. When data is to be transmitted, the total number of ones for the character is made an even number or odd number of ones depending on the setting of this bit, and this is checked at the receiving end.


Total number of ones: odd number
1
0
1
1
0
0
1
1
Character
Parity bit

In the above case:
Parity error for an even number under parity check.
No parity error for an odd number under parity check.

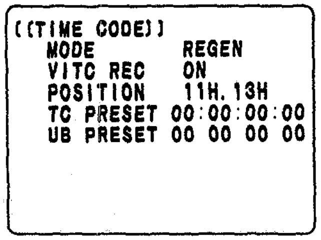
[Note 4]
Baud rate (data transmission rate)
This is the volume of data which can be sent in one second. For instance, a rate of 2400 bps means that 2400 bits of data is sent in one second.

■ This screen appears only when the optional AG-IA671 has been installed.

Menu Screen 8

(Time code setting)

Recording the time code is a handy way of finding absolute positions on the tape.



```
[[TIME CODE]]
  MODE          REGEN
  VITC REC      ON
  POSITION      11H.13H
  TC PRESET 00:00:00:00
  UB PRESET 00 00 00 00
```

■ Selecting the time code.

1 MODE

Select the time code mode.

REGEN: The regeneration mode is established. The VTR's clock value serves as the time code value, and the data and alarm count are written into the user's bit.

P FREE-RUN: The count starts from a preset time code value. The count continues to advance regardless of whether the VTR is recording or stopped. [See Note 1]

P REC-RUN: The count starts from a preset time code value. The count advances only during recording. [See Note 2]

■ Setting the time code (VITC) recording ON/OFF

2 VITC REC

Set the time code (VITC) recording ON or OFF.
ON: The time code is recorded.
OFF: The time code is not recorded.

[See Note 3]

■ Setting the time code (VITC) insertion lines

3 POSITION

Set the lines at which the VITC code is to be inserted.
10H-19H: Select two insertion lines which are not side by side.

[See Note 4]

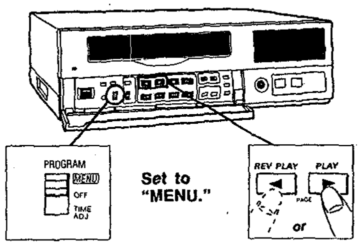
■ Setting the time code preset (default) value

4 TC PRESET

Set the time code default value.
00:00:00:00: Set the values for hours/minutes/seconds/frames.

- Any value from 00:00:00:00 to 23:59:59:29 can be set.

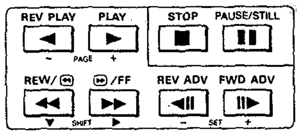
[Displaying the screens]



Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]



PAGE (–) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (▶) button: Move to item on the right
SET (–) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

■ Setting the user's bit preset value

5 UB PRESET

Set the user's bit preset value.
00:00:00:00: Set an 8-digit alphanumeric string.

- Any of the following 16 alphanumerics can be used: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F.

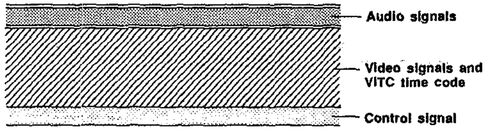
[See Note 5]

■ Time code

00 : 00 : 00 : 00

Hours : minutes : seconds : frames   1 second ≈ Approx. 30 frames

Position where the time code is recorded on the tape



- The VTR's time code is forcibly recorded on the drop-frame mode. To make up for the time lag between colorsynchronizing and actual time over a long time, two frames (00, 01) each are skipped from the beginning of each minute except 0, 10, 20, 30, 40, 50 minutes.
- The VITC cannot be recorded when video signals are not supplied.

NOTES

[Note 1]
Free-running mode
In this mode, the time code is counted at all times. It is useful when recording durations in real time.

[Note 2]
Rec-running mode
In this mode, the time code is counted only while the VTR is in the recording mode. It is handy when ascertaining accurately an absolute position on the tape.

[Note 3]
VITC
This stands for vertical interval time code. It is a signal which is recorded on the vertical lines on the tape. It is recorded together with the video signals.

[Note 4]
Insertion line
This refers to the vertical line position where the VITC is recorded. Two lines are selected.

[Note 5]
User's bit
This is a code which the user sets as desired. It is useful for recording a control number or a tape's serial number, for instance, on the tape.

Checkpoints For Menu Setting

- ■ The menu screens appear only when the VTR is in the stop or eject status and when the recording lock switch is OFF. They do not appear when it is recording or playing back a tape, etc.
- ■ Internal timer recording is not activated unless the time and date have been set.
- ■ Whatever has been set on the menu screens is entered when the PROGRAM switch is returned to the "OFF" position.
- ■ How to select time modes
  Refer to the table below and select the modes which fit the objective of the intended application.

Mode		Rec. enable time (hour)	Video rec. interval (sec)	Audio rec	Camera switchover interval (sec)		Tape replacement standard (recording times)
		NV-T120 tape			TM1	TM2	
6H		6	0.016	Possible	0.03	0.03	—
L18H		18	0.05	Possible	0.05	0.1	50
L24H		24	0.083	Possible	0.167	0.083	50
24H		24	0.083	Not possible	0.167	0.083	50
48H		48	0.15	Not possible	0.3	0.15	25
72H		72	0.217	Not possible	0.433	0.217	20
96H		96	0.283	Not possible	0.567	0.283	20
120H		120	0.35	Not possible	0.7	0.35	15
180H		180	0.517	Not possible	1.033	0.517	10
240H		240	0.683	Not possible	1.367	0.683	8
480H		480	1.35	Not possible	2.7	1.35	4
960H		960	2.683	Not possible	5.367	2.683	2
Note 000H	Manual	Approx. 120	Approx. 1.0	Not possible	—	—	—
	1 min.	7,200	60	Not possible	—	—	—
	2 min.	14,400	120	Not possible	—	—	—
	3 min.	21,600	180	Not possible	—	—	—

* The figures in the table apply when TM1 and TM2 for CAMERA SWTIMING on menu screen 4 have been set to 1 FRAME and 1 FIELD, respectively. To ascertain the camera switchover interval when TM1 and TM2 have been set to other timing values, multiply the timing setting by the figure given in the above table for the mode in question.

****0.03**

Since the cameras cannot be switched over in 1-field units in the 6H mode, the switchover takes place at 0.03-second intervals.
Use 0.016-second as the basis for multiplication involving two or more fields.
(For instance, with a 2 FIELD setting, multiply 0.016 by 2 which yields 0.03 sec.; with a 3 FIELD setting, multiple 0.016 by 3 which yields 0.048 sec.)

Note: The figures for 000H (1-shot recording) apply when the 1-shot recording time on menu screen 5 has been set to 1 field.

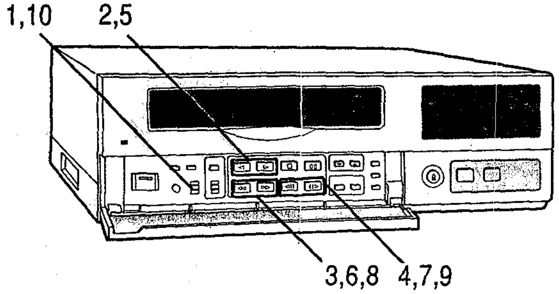
- A 2H time mode tape which was recorded using another VTR can be played back in the 2H time mode.
- In all modes except 6H and L18H, the actual recording enable time will be about 6 hours longer than the figure for the recording enable time given in the above table although this will depend on the cassette tape used. For instance, recording is possible for about 30 hours using a 120-minute tape in the 24H mode.

Helpful Functions

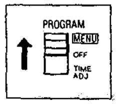
Applications

1-Shot Recording 58
Other Functions 62

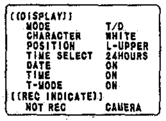
1-Shot Recording


1,10
2,5
3,6,8
4,7,9

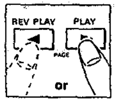
The steps for 1-shot recording used for data files and animation, for instance, are described in this section.

1

PROGRAM
MENU
OFF
TIME ADJ

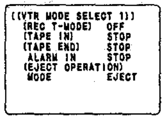
Set this switch to "MENU."



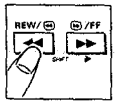
```
((DISPLAY))
  MODE           T/D
  CHARACTER      WHITE
  POSITION       L-UPPER
  TIME SELECT    24HOURS
  DATE           ON
  TIME           ON
  T-MODE         ON
((REC INDICATE))
  NOT REC        CAMERA
```

2

REV PLAY
PLAY
PAGE
or

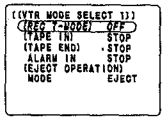
Press one of these buttons to display menu screen 2.



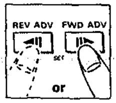
```
((VTR MODE SELECT 1))
  (REC T-MODE)   OFF
  (TAPE IN)      STOP
  (TAPE END)     STOP
   ALARM IN      STOP
  (EJECT OPERATION)
   MODE          EJECT
```

3

REW/
/FF
SHIFT

Press this button to select "REC T-MODE."

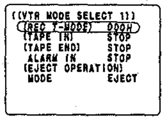


```
((VTR MODE SELECT 1))
  (REC T-MODE)   OFF
  (TAPE IN)      STOP
  (TAPE END)     STOP
   ALARM IN      STOP
  (EJECT OPERATION)
   MODE          EJECT
```

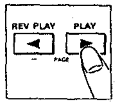
4

REV ADV
FWD ADV
SET
or

Press one of these buttons to display "000H."

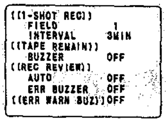
[See Note 1]



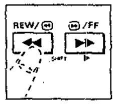
```
((VTR MODE SELECT 1))
  (REC T-MODE)   000H
  (TAPE IN)      STOP
  (TAPE END)     STOP
   ALARM IN      STOP
  (EJECT OPERATION)
   MODE          EJECT
```

5

REV PLAY
PLAY
PAGE

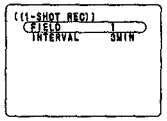
Press this button to display menu screen 5.



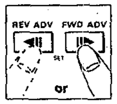
```
((1-SHOT REC))
   FIELD          1
   INTERVAL      3MIN
((TAPE REMAIN))
   BUZZER        OFF
((REC REVIEW))
   AUTO          OFF
   ERR BUZZER    OFF
((ERR WARN BUZ))OFF
```

6

REW/
/FF
SHIFT

Press one of these buttons to select "FIELD."

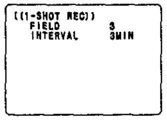


```
((1-SHOT REC))
   FIELD          1
   INTERVAL      3MIN
```

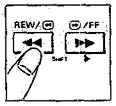
7

REV ADV
FWD ADV
SET
or

Press one of these buttons to set the 1-shot recording time.

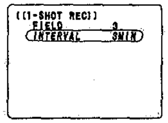
[See Note 2]



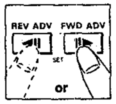
```
((1-SHOT REC))
   FIELD          3
   INTERVAL      3MIN
```

8

REW/
/FF
SHIFT

Press this button to select "INTERVAL."

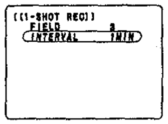


```
((1-SHOT REC))
   FIELD          3
   INTERVAL      3MIN
```

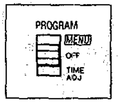
9

REV ADV
FWD ADV
SET
or

Press one of these buttons to set the interval time.

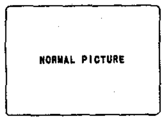
[See Note 3]



```
((1-SHOT REC))
   FIELD          3
   INTERVAL      1MIN
```

10

PROGRAM
MENU
OFF
TIME ADJ

Set this switch to "OFF."



```
NORMAL PICTURE
```

↓ (Continued overleaf)

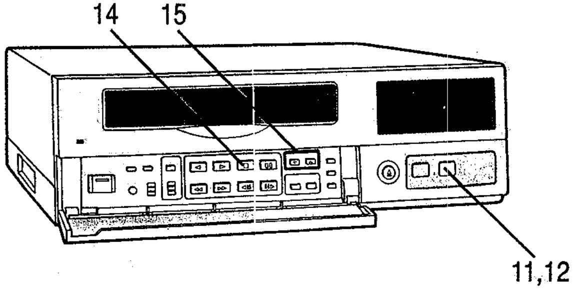
NOTES

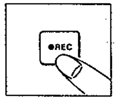
[Note 1]
When "REC T-MODE" on menu screen 2 is "OFF," the time mode can be set to "000H" also by pressing the TIME MODE button on the front sub panel.

[Note 2]
Each time the SET button is pressed, the time for recording one frame is successively changed as follows: 1 → 2 → 3 → 4 → 5 → 10 → 15 → 20 → 30 → 40 → 50 → 60 → 1 → 2 ... (Unit: field)

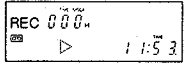
[Note 3]
Each time the SET button is pressed, the interval time is successively changed as follows: 1 → 2 → 3 → 1 ... (Unit: minute)

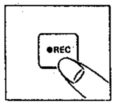
1-Shot Recording
(Continued)



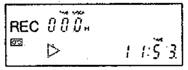
11


When this button is pressed, few shots are recorded and the VTR is set to the recording standby mode.

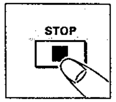


12


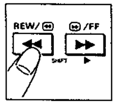
When the button is pressed again, 1 shot is recorded and the VTR is set to the recording standby mode.



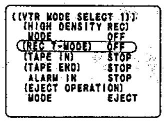
13
- **One frame (shot) is recorded each time this button is subsequently pressed.**
- **If the REC button is not pressed, one frame (shot) is recorded automatically when the interval time elapses.**

14


Press this button to stop 1-shot recording.

15


To release this mode, set to any position except "000H."



```
((VTR MODE SELECT 1))
 (HIGH DENSITY REC)
  MODE             OFF
 (REC T-MODE)      OFF
 (TAPE IN)         STOP
 (TAPE END)        STOP
  ALARM IN         STOP
 (EJECT OPERATION)
  MODE             EJECT
```

- 1-shot recording using a remote switch
  Besides activating 1-shot recording by pressing the REC button on the VTR's front panel, it is also possible to connect a remote switch and activate 1-shot recording from a distance by remote control.

- Ask your dealer to give you details about a remote switch.
- The ON time for the remote switch must be at least 100ms.
- An interval of at least 1 second is required to turn on the remote switch. Refer to page 68 for the signal levels.

NOTES

[Other notes]
Refer to page 49 for the lengths of time during which recording can be performed in the 1-shot recording mode.

Other Functions

Power restoration recording

When there was a power failure during recording, the VTR is automatically set to the recording mode provided that the power is restored within one month.

- Immediately after the power has failed, the VTR is set to the tape protection mode so as to protect the video heads and tape.
- The VTR status established after the power is restored depends on the status established prior to the power failure and on the recording mode, as follows.

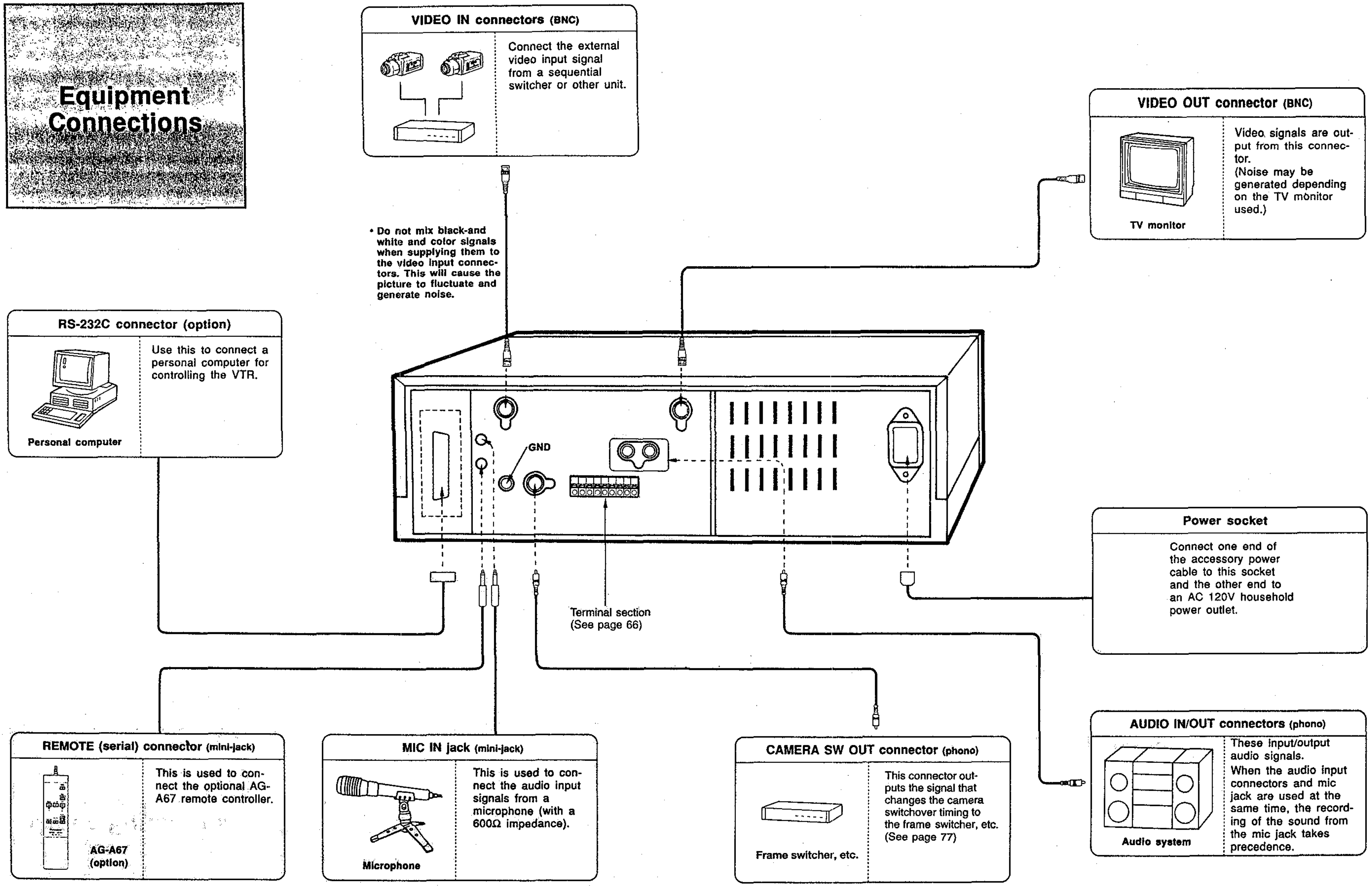
Status / Mode	Recording	Playback, *stop, fast* forward, rewind	Auto rewinding during auto repeat recording
Alarm	Recording	Stop	Recording after tape is rewound to its start
Internal timer	Resume the recording as per the settings of the internal timer.		
External timer	Recording	Recording	Recording after *tape is rewound* to its start

- In the event of power failure lasting more than one month, recording will be forcibly started by the recorder in the 72H mode once the power has been restored if a tape has been loaded.

Connections

Equipment Connections 64
Terminal Connections 66
Terminal Signal Levels 68

Equipment Connections



VIDEO IN connectors (BNC)

Connect the external video input signal from a sequential switcher or other unit.

- **Do not mix black-and white and color signals when supplying them to the video input connectors. This will cause the picture to fluctuate and generate noise.**

VIDEO OUT connector (BNC)

Video signals are output from this connector.
(Noise may be generated depending on the TV monitor used.)

RS-232C connector (option)

Use this to connect a personal computer for controlling the VTR.

Power socket

Connect one end of the accessory power cable to this socket and the other end to an AC 120V household power outlet.

Terminal section (See page 66)

REMOTE (serial) connector (mini-jack)

This is used to connect the optional AG-A67 remote controller.

MIC IN jack (mini-jack)

This is used to connect the audio input signals from a microphone (with a 600Ω impedance).

CAMERA SW OUT connector (phono)

This connector outputs the signal that changes the camera switchover timing to the frame switcher, etc. (See page 77)

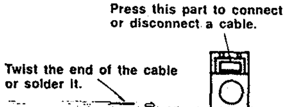
AUDIO IN/OUT connectors (phono)

These input/output audio signals.
When the audio input connectors and mic jack are used at the same time, the recording of the sound from the mic jack takes precedence.

Terminal Connections

Notice for cables connected to terminals

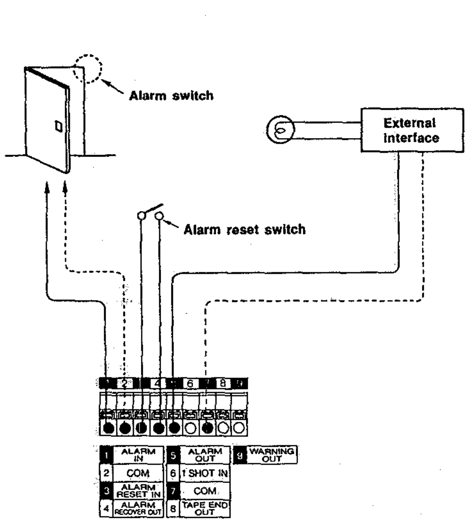
As shown in the figure below, securely twist the end of the cables which are to be connected to the terminals.


Press this part to connect or disconnect a cable.
Twist the end of the cable or solder it.

Use wires with the specifications given below.
Solid wires: ø0.4 to ø1.2 mm diameter
Stranded wires: 0.3 to 1.25 mm^2
(The strands must have a diameter of ø0.18 mm or more.)

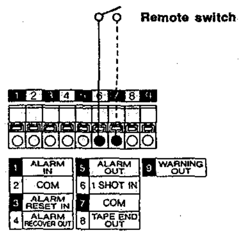
- ■ Short-circuiting may result if the end of a cable has not been twisted securely.

Connections for alarm recording


Alarm switch
External Interface
Alarm reset switch
1
2
3
4
5
6
7
8
9
ALARM IN
COM
ALARM RESET IN
ALARM RECOVER OUT
ALARM OUT
1 SHOT IN
COM
TAPE END OUT
WARNING OUT

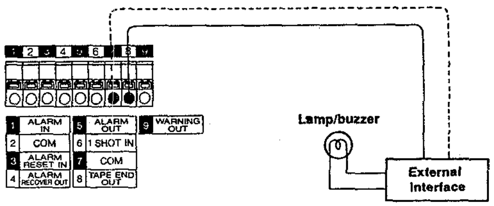
- ■ Alarm recording is commenced when the alarm switch is set ON.
- ■ Alarm recording is released when the alarm reset switch is set ON.
- ■ When alarm recording is started, the alarm lamp and buzzer are activated. Use a +12V alarm lamp and buzzer.

Connections for 1-shot recording


Remote switch
1
2
3
4
5
6
7
8
9
ALARM IN
COM
ALARM RESET IN
ALARM RECOVER OUT
ALARM OUT
1 SHOT IN
COM
TAPE END OUT
WARNING OUT

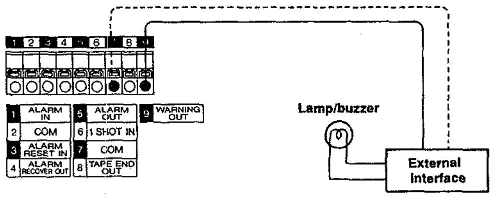
- ■ When the remote switch is set ON, one shot (frame) is recorded.
- ■ The ON time for the remote switch must be at least 100ms.
- ■ An interval of at least 1 second is required to turn on the remote switch.

Connections for tape-end output


1
2
3
4
5
6
7
8
9
ALARM IN
COM
ALARM RESET IN
ALARM RECOVER OUT
ALARM OUT
1 SHOT IN
COM
TAPE END OUT
WARNING OUT
Lamp/buzzer
External Interface

- ■ When the cassette tape reaches its end during recording, the alarm unit connected externally is activated.

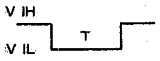
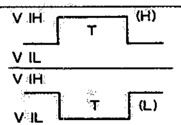
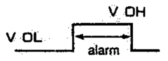
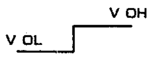
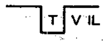
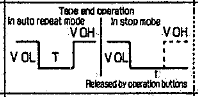
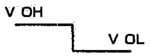
Connections for auto OFF output


1
2
3
4
5
6
7
8
9
ALARM IN
COM
ALARM RESET IN
ALARM RECOVER OUT
ALARM OUT
1 SHOT IN
COM
TAPE END OUT
WARNING OUT
Lamp/buzzer
External Interface

- ■ When a malfunction has occurred in this VTR, the alarm unit connected externally is activated.

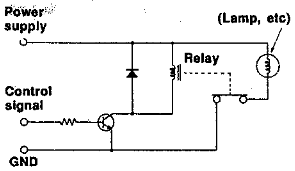
In such a case, an error code will appear on the display (see page 71).

Terminal Signal Levels

Name of terminal	Signal level		Remarks
Alarm input		V IL=0~0.6V T≧100mS	Ground input
Alarm reset input	 V IH (H) T V IL V IH T (L) V IL	V IH=4~5V V IL=0~0.6V T≧100mS	High/low input (H) or. (L) can be selected on menu screen 4.
Alarm reset output	 V OH V OL alarm	V OH=5±0.5V(200Ω) V OL=0~0.6V(Max.3mA)	High output
Alarm output		V OH=11~13V(4700Ω) V OL=0~0.6V(Max.3mA)	High output
1-shot recording input		V IL=0~0.6V T≧100mS	Ground input
Tape-end output	 Tape end operation In auto repeat mode In stop mobe V OH V OL T V OL V OH Released by operation buttons	V OH=11~13V(4700Ω) V OL=0~0.6V(Max.3mA) T=approx.2s	Ground output
Auto OFF output		V OH=11~13V(4700Ω) V OL=0~0.6V(Max.3mA)	Ground output

External interfacing specifications

Example of lamp lighting with high signal.


Power supply
(Lamp, etc)
Relay
Control signal
GND

■ Use devices with ratings which match the actual conditions of use.

Precautions For Use

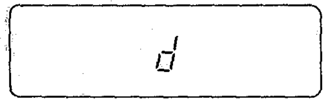
Dew ("ď") Display 70
Error Codes 71
Safety Precautions 72
Handling Precautions 73
Daily Inspections/Regular Inspections 74
Optional Accessories 76
Troubleshooting (Q&A) 78

Dew ("d") Display

Dew (or condensation) refers to the phenomenon whereby droplets of water form, for instance, on the window pane of a warm room in winter.

■ When dew forms inside the VTR, the "d" mark appears on the display.

Wait a few hours until the "d" mark is cleared before proceeding any further with operation.



"d" refers to the first letter of the word "dew."

■ When dew has formed:

- "d" appears on the display.
- The VTR cannot be operated until "d" is cleared from the display. Wait until it is cleared.
- When dew forms with the power OFF, the power is automatically switched on and the "d" mark appears.
- If a cassette has been installed, it is ejected half-way.
- If a cassette has not been installed, one cannot be installed until "d" is cleared from the display.

■ When the dew status is released:

- The VTR is restored to the state where regular operation is possible.
- If a cassette was installed, it is set to the stop mode.
- If dew formed during recording, the VTR is reset to the recording mode after the dew status is released.

■ Take care even while dew is forming!

Dew normally forms gradually, and the "d" mark may not flash for the first 10 to 15 minutes of dew formation. If the room temperature or humidity has changed, wait 20 minutes or so before using the VTR.

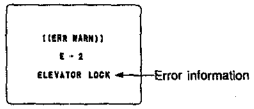
■ Conditions conductive to dew-forming

- When the VTR or cassette is moved from one location to another where the temperature or humidity is significantly different from the original location
- Where the humidity is high
- When the VTR or cassette is moved rapidly from a cool place to where the temperature or humidity is high
- A room immediately after it has been heated up

Error Display

When a malfunction occurs in the VTR, an error code appears on its display.

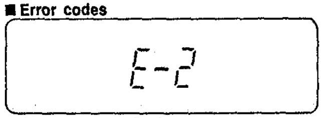
■ When the ERR WARN BUZ on the menu screen 5 is set to ON, information on the error is displayed on the monitor screen.


[(ERR WARN)]
E - 2
ELEVATOR LOCK

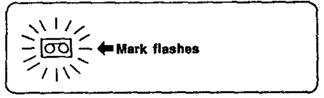
■ An error display appears on the display tube when a failure or malfunction has occurred in the unit. The error display indicated on the display denotes the nature of the failure or malfunction.

Take the remedial action described below.

■ Error codes



■ Cassette mark flashing error



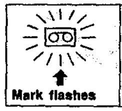
■ When an error code appears:

- An error code appears on the display.
- All operations are shut down when an error code appears on the display.
- **If the error is not released even after taking the remedial action described below, switch off the power, disconnect the power cable from the power outlet, and contact your dealer immediately.**

■ List of error codes

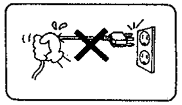
Error code	Malfunction	Remedial action
E-2	Malfunction in elevator section	These errors may occur if the video cassette has not been loaded properly. Try switching the power off and turning it back on again.
E-3	Malfunction in loading section	
E-4	Malfunction in cylinder section	These errors may occur if there is something wrong with the state of the video cassette. Try switching the power off and turning it back on again and replacing the video cassette.
E-5	Malfunction in reel section	
E-6	Incorrect tape tension	
E-7	Malfunction in reel solenoid	Try switching the power off and turning it back on again.
E-A	Malfunction in audio recording circuitry	Try switching the power off and turning it back on again.

■ Cassette mark flashing error

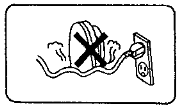
 **Mark flashes**	The cassette mark (⊡) on the display tube flashes if it was not possible for the proper video level to be obtained after the recording review operation due to dirt on the heads or deterioration of the tape. VTR operation can still be continued but be sure to clean the heads or replace the cassette tape.

Safety Precautions

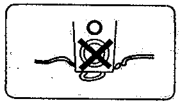
Be sure to heed these safety precautions to prevent fire, electric shocks and injury.



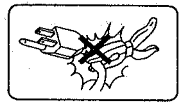
Always hold the plug when connecting and disconnecting the power cable!



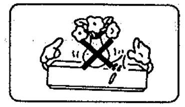
Do not bring the power cable near hot appliances!



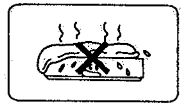
Do not place heavy objects on top of the power cable!



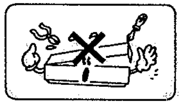
Do not tamper with the power cable!



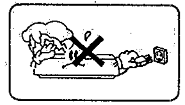
Do not place a container with water on top of the VTR or bring it close to the VTR!



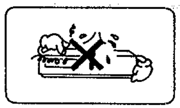
Do not block the ventilation holes!



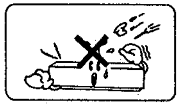
Do not remove the cabinet panels!
Touching the inside parts is not only dangerous but can also lead to breakdowns. Do not poke metal objects inside the VTR.



Do not use the VTR in a thunderstorm!
Disconnect the power plug as soon as possible.



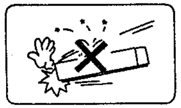
Do not insert any object other than a video cassette into the cassette loading slot!



Stop using the VTR if smoke, malodors or unusual sounds come from it!
Contact your dealer immediately.

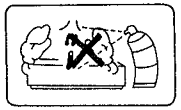
Handling Precautions

Be sure to heed these handling precautions to prevent failures and breakdowns.

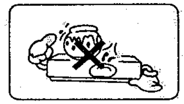


When moving the VTR:

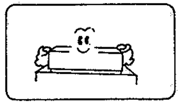
- Do not subject it to impact.
- Be sure to disconnect all the wires connected to it.
- Hold it securely so that it will not fall on your feet.



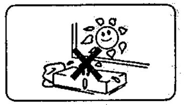
Do not spray insecticides or volatile substances onto the VTR!
These may cause discoloring or the paint to peel off.



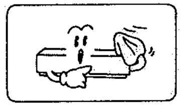
Do not place heavy objects on top of the VTR.



Install the VTR on a level and stable surface.

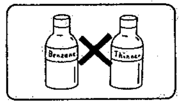


Avoid installing the VTR at a location which is exposed to direct sunlight.



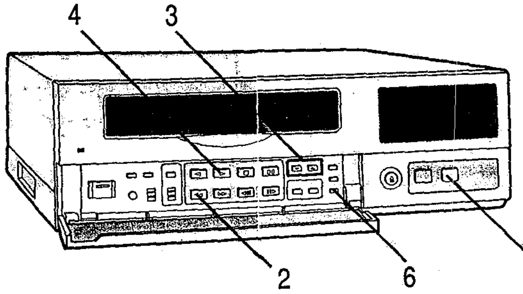
Wipe off any dirt using a soft cloth.

- Dip the cloth into diluted neutral detergent and wipe off the dirt.
  Be sure to wipe the VTR dry afterwards.



Do not use benzene or paint thinners to clean this unit.
These may cause discoloring or the paint to peel off.

- ■ The top panel and rear parts will become quite warm after extended use. This is normal and not indicative of a failure or malfunction.
- ■ When the VTR is not going to be used, be sure to remove the cassette and set the power switch to "OFF."

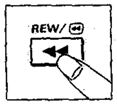


This unit is designed to withstand prolonged use. However, do not forget to perform the daily and regular inspections.

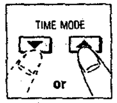
■ Daily inspections

1 **Turn on the power to all the units.**

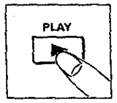
- Is the TV monitor showing the correct picture?
- Are the time and date set properly?

2 

Slightly rewind the tape in a cassette used for recording on the previous day.

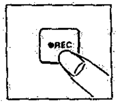
3 

Press one of these buttons to set the time (hour) mode to "2H."

4 

Press this button to monitor the pictures.

- Is the playback picture free from problems?
- Are the recorded time and date correct?

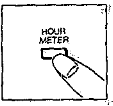
5 

Try recording in the 6-hour mode.

- Play back the recording. Is there anything abnormal?

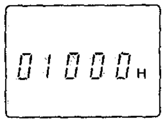
■ Regular inspections

- The regular inspections are performed by your dealer.
- This unit comes with a function (hour meter) which displays the number of hours that it has been used, and this display serves as a general guideline for the regular inspections.
- Depending on the total number of hours that the VTR has been used (the cylinder has turned), parts inside the unit must be replaced or cleaned.
- For further details, consult with your dealer.

6 

Press this button.

The total number of hours now appears on the display.



NOTES

- If a problem has arisen after the daily inspection, refer to the *"Troubleshooting Q&A"* page, and try to *remedy the cause* of the problem.

  If the malfunction still cannot be remedied, switch off the power, hold the power plug and disconnect the power cable *from the* power outlet, and consult your dealer.

- Do not forget to perform the daily inspections particularly with auto repeat recording.

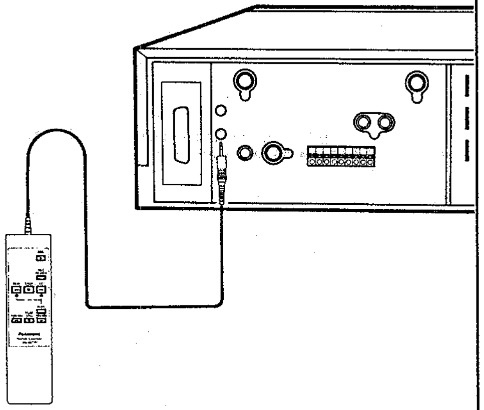
Optional Accessories

A variety of optional accessories are available to enable you to make the maximum use of this VTR's functions.

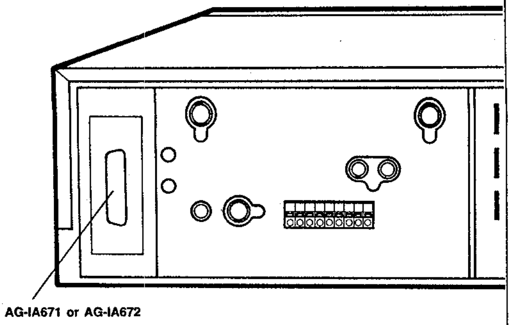
AG-A67 Remote Controller

This VTR can be operated by remote control instead of using its function buttons if the optional AG-A67 remote controller is connected to the remote controller input connector on the VTR's rear panel.

- ■ The functions which can be controlled using the AG-A67 remote controller are listed below:
  REC, REC REVIEW, REW, FF, PLAY, PAUSE/STILL, REV ADV, FWD ADV
- ■ Do not connect headphones, etc. to the REMOTE control input connector.



AG-IA671 or AG-IA672 Interface Adaptor


AG-IA671 or AG-IA672

The functions listed below can be added by mounting the interface board adaptor.

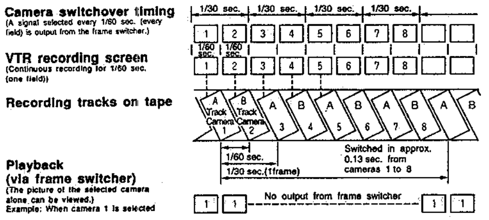
RS-232C communication functions
The VTR can be controlled using a personal computer. Menu screen 7 (RS-232C parameter settings) is added.

VITC time code recording/playback function (AG-IA671 only)
Time code signals can be recorded onto the tape. These come in handy for searches by locating absolute positions on the tape.
Menu screen 8 (time code settings) is added.

Frame Switcher

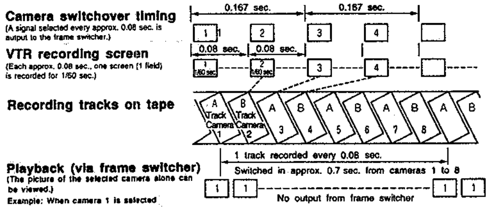
When model WJ-FS616 is used:

■ Continuous recording (using 8 cameras) in 6H mode


Camera switchover timing
(A signal selected every 1/60 sec. (every field) is output from the frame switcher.)
1/30 sec.
1/30 sec.
1/30 sec.
1/30 sec.
1
2
3
4
5
6
7
8
1/60 sec.
1/60 sec.
VTR recording screen
(Continuous recording for 1/60 sec. (one field))
1
2
3
4
5
6
7
8
Recording tracks on tape
A Track Camera 1
B Track Camera 2
A 3
B 4
A 5
B 6
A 7
B 8
A
B
1/60 sec.
1/30 sec.(1frame)
Switched in approx. 0.13 sec. from cameras 1 to 8
Playback (via frame switcher)
(The picture of the selected camera alone can be viewed.)
Example: When camera 1 is selected
1
1
No output from frame switcher
1
1

Using the switch inside the WJ-FS616, a black picture is recorded once when one round of pictures from all the cameras has been recorded.

■ 24-hour (HDR) mode (using 8 cameras)


Camera switchover timing
(A signal selected every approx. 0.08 sec. is output to the frame switcher.)
0.167 sec.
0.167 sec.
1
2
3
4
0.08 sec.
0.08 sec.
VTR recording screen
(Each approx. 0.08 sec., one screen (1 field) is recorded for 1/60 sec.)
1 1/60 sec.
2 1/60 sec.
3
4
Recording tracks on tape
A Track Camera 1
B Track Camera 2
A 3
B 4
A 5
B 6
A 7
B 8
A
B
1 track recorded every 0.08 sec.
Switched in approx. 0.7 sec. from cameras 1 to 8
Playback (via frame switcher)
(The picture of the selected camera alone can be viewed.)
Example: When camera 1 is selected
1
1
No output from frame switcher
1
1

The pictures of 8 cameras can be switched with each field and recorded, and only the picture of the camera selected during playback can be viewed and continuously played back.

- If continuous recording is set, each camera can be switched in 1/60 sec. and its picture recorded. (Using the WJ-FS616)
  During playback, only the picture of the same camera can be output through the frame switcher.
- The frame switcher can be used even during time lapse recording. In the 24-hour mode, for instance, time lapse recording is done at approx. 0.08-second intervals with camera switchover at approx. 0.08-second intervals. (Using the AJ-FS216 and AJ-FS616)
- When the WJ-FS216 or WJ-FS616 frame switcher is used, set the camera switchover timing mode on menu screen 4 to "TM 2." (See page 47)
- The WJ-FS10A frame switcher cannot be used.
- Do not record the VITC time code when using the frame switcher. This will cause the unit to operate incorrectly during playback. (For further details, refer to the operating instructions of the frame switcher used.)
- During playback, turn the Quasi-V insertion to ON or OFF with the FWD ADV button. This enables the appearance of the pictures of other cameras to be reduced.

Troubleshooting (Q&A)

■ Power supply

Trouble	Check	Remedy
No power	• Has the power plug been disconnected from the outlet?	Connect the power plug properly.
	• Is an external timer connected?	Operate the external timer and supply power to the VTR.

■ Operation

Trouble	Check	Remedy
No operation no matter which function button is pressed.	• Has an error code appeared on the display?	See page 71.
	• Has the "δ" mark appeared on the display?	See page 70.
	• Is the recording mode set to INTERNAL TIMER?	Press the REC MODE button.
	• Has the cassette been loaded properly?	Load it again properly.

■ Recording

Trouble	Check	Remedy
No recording	• Has the "tab" on the cassette tape been broken out?	See page 36.
	• Is the tape at its end?	Rewind it.
	• Has the PAUSE/STILL button been pressed?	Release it.
Recording cannot be stopped.	• Is the REC LOCK switch set to "1" or "2"?	Set the REC LOCK switch to "OFF."
No power restoration recording.	• Has the power failure lasted a month or more?	See page 62.
No internal timer recording.	• Have the time and date been set?	Complete the time/date settings. (See page 34)

■ Recording

Trouble	Check	Remedy
No auto repeat recording	• Is "TAPE END MODE" on menu screen 2 set to "REPEAT"?	Set to "REPEAT." (See page 43)
No alarm recording.	• Is "MODE" on menu screen 4 set to any position other than "OFF"?	Set to any position other than "OFF." (See page 46)
	• Are the alarm switch connections complete?	Complete the connections. (See page 66)
No buzzer at tape-end.	• Is "TAPE END MODE" on menu screen 2 set to "BUZZER"?	Set to "BUZZER." (See page 43)

■ Playback

Trouble	Check	Remedy
No playback	• Has a pre-recorded cassette been loaded?	Load the cassette properly.
Noise on playback screen.	• Any tracking deviation?	Press the TRACKING buttons to adjust the tracking. (See page 31)
	• Dirty heads?	Clean the heads with the optional cleaning tape. If the problem is not remedied, consult your dealer.
	• Old tape?	Replace with a new cassette tape.
Playback picture shakes vertically.	• Does the vertical hold on the TV monitor need adjusting?	Adjust the vertical hold on the TV monitor.

■ Menu screens

Trouble	Check	Remedy
No menu screens	Is the VTR in the stop or eject mode?	The menu screens appear only when the VTR is in the stop or eject mode.
	Is the recording lock switch at the "OFF" position?	The menu screen will not appear if this switch is set to "1" or "2."

■ Clock displays

Trouble	Check	Remedy
Time is not displayed correctly.	Is the internal battery capacity still sufficient?	Keep the power supplied continuously for at least 40 hours. (See page 35) If the time is still not displayed correctly, the internal battery may have reached the end of its service life.

Memo

SECTION 2

DISASSEMBLY PROCEDURES

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2-1. DISASSEMBLY FLOWCHART

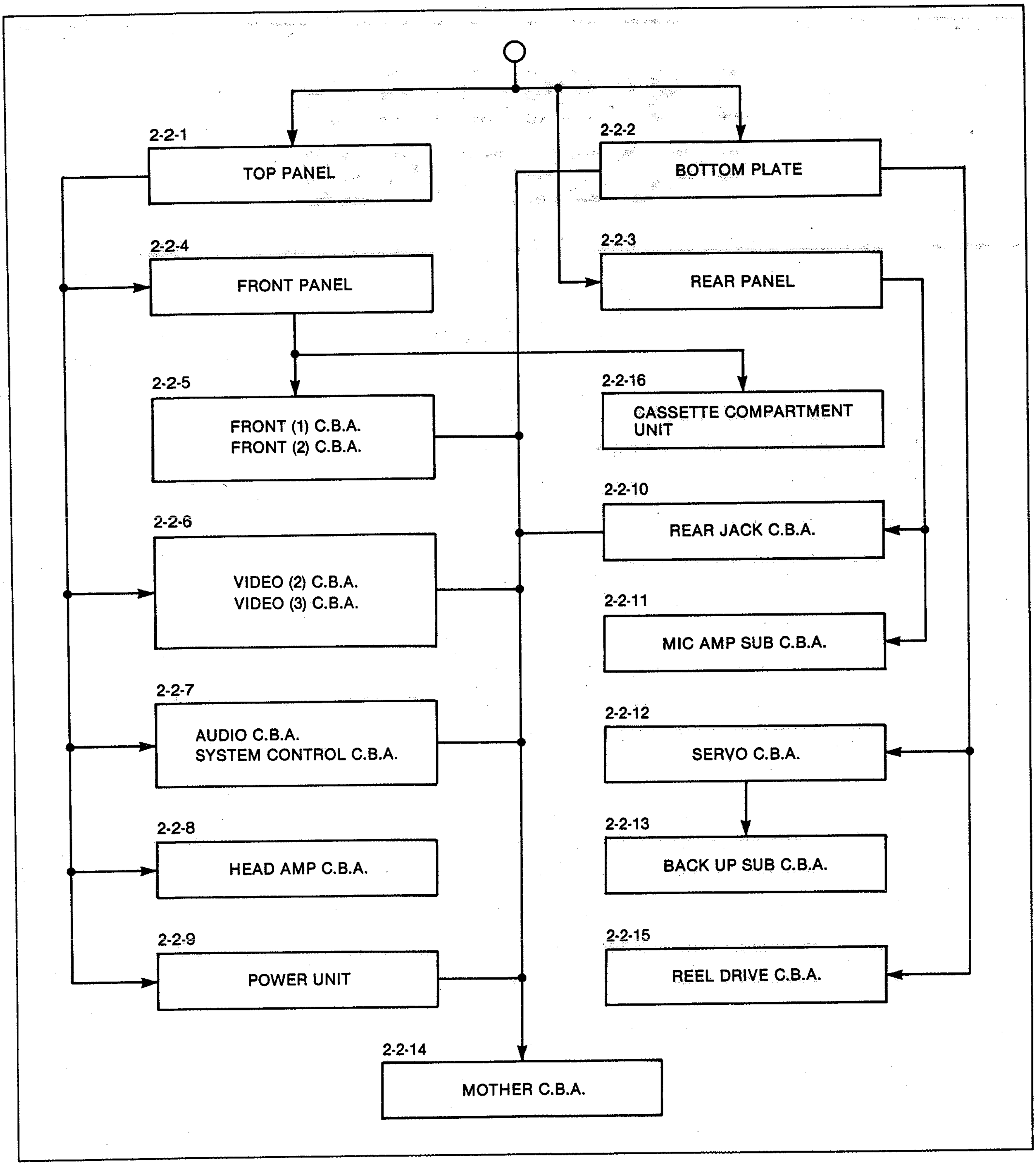

2-2-1
TOP PANEL
2-2-2
BOTTOM PLATE
2-2-4
FRONT PANEL
2-2-3
REAR PANEL
2-2-5
FRONT (1) C.B.A.
FRONT (2) C.B.A.
2-2-16
CASSETTE COMPARTMENT UNIT
2-2-10
REAR JACK C.B.A.
2-2-6
VIDEO (2) C.B.A.
VIDEO (3) C.B.A.
2-2-11
MIC AMP SUB C.B.A.
2-2-7
AUDIO C.B.A.
SYSTEM CONTROL C.B.A.
2-2-12
SERVO C.B.A.
2-2-8
HEAD AMP C.B.A.
2-2-13
BACK UP SUB C.B.A.
2-2-9
POWER UNIT
2-2-15
REEL DRIVE C.B.A.
2-2-14
MOTHER C.B.A.

Figure D1

The above flow chart describes the order of steps for removing the cabinet parts and certain printed circuit boards in order to gain access to the items needing servicing. To reassemble the unit, follow the steps in reverse order.

2-2. DETAILED DISASSEMBLY METHOD

2-2-1. Removal of the Top Panel

1. Unscrew the 2 screws (A) on both side of the Top Panel (Figure D2).
2. Careful lift the rear of the case and side it off the back of the unit.

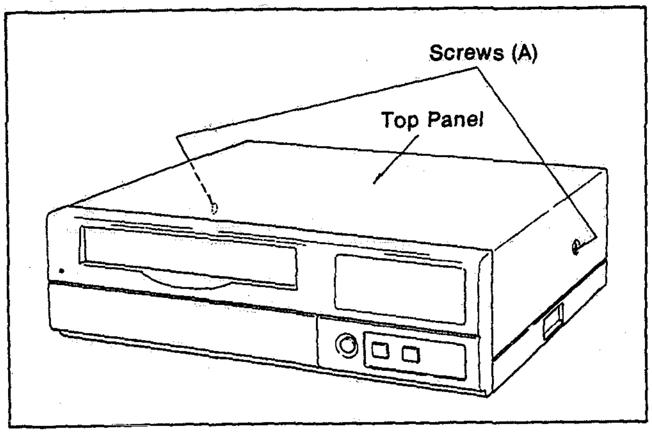

Screws (A)
Top Panel

Figure D2

2-2-2. Removal of the Bottom Plate

1. Unscrew the 7 screws (B) on the Bottom Plate. (Figure D3).
2. Lift the Bottom Plate.

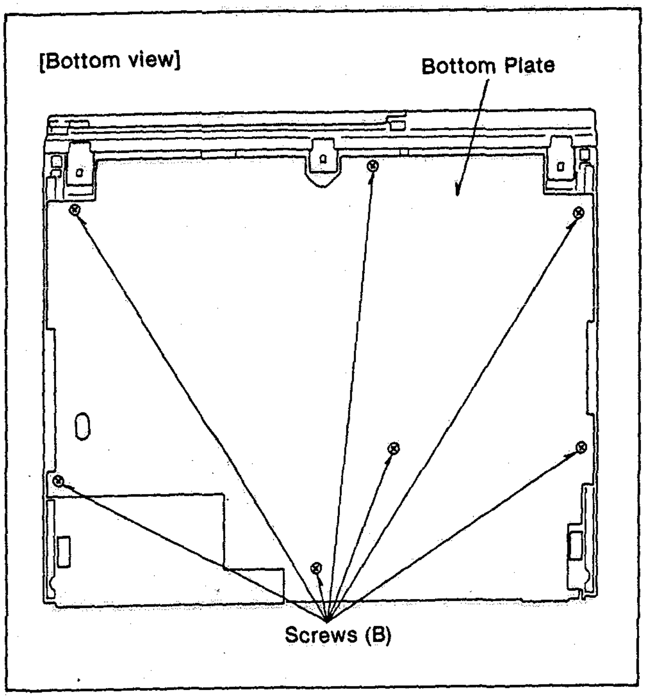

[Bottom view]
Bottom Plate
Screws (B)

Figure D3

2-2-3. Removal of the Rear Panel

1. Unscrew the 4 screws (C) on the Rear Panel (Figure D4).
2. Lift the Rear Panel and carefully pull the panel off from the unit (with *taking care for the connection* to the Mother C.B.A. at the lower edge on the Rear Jack C.B.A.)

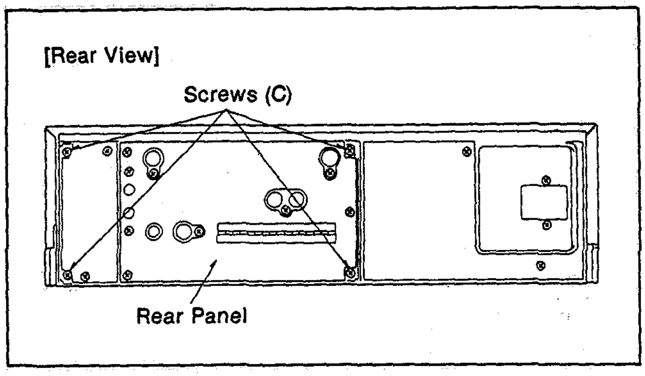

[Rear View]
Screws (C)
Rear Panel

Figure D4

2-2-4. Removal of the Front Panel

1. Unscrew the 3 screws (D) on the top of the Front Panel (Figure D5).
2. Unlock the 3 locking tabs (E) on the top of the Front Panel and the 3 locking tabs (F) on the bottom of Front Panel (Figure D5 and Figure D6).
3. Lift the Front Panel.

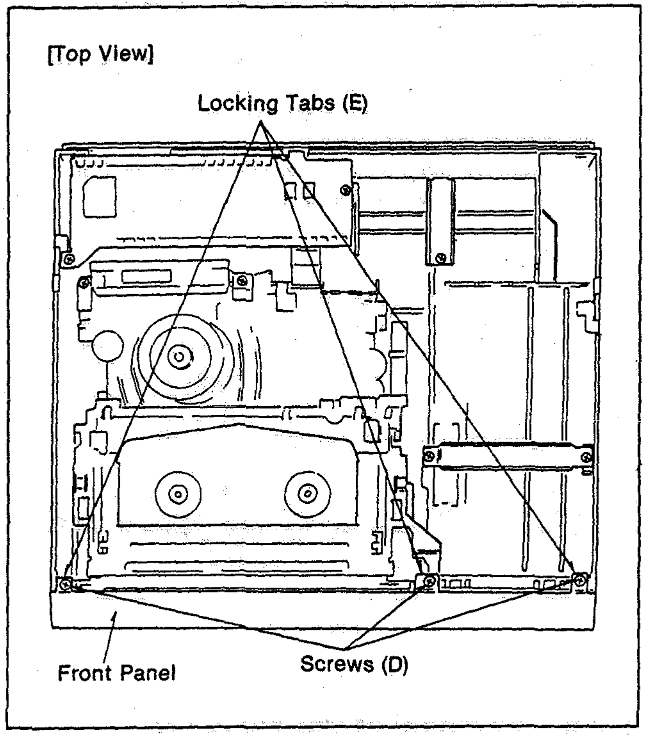

[Top View]
Locking Tabs (E)
Front Panel
Screws (D)

Figure D5

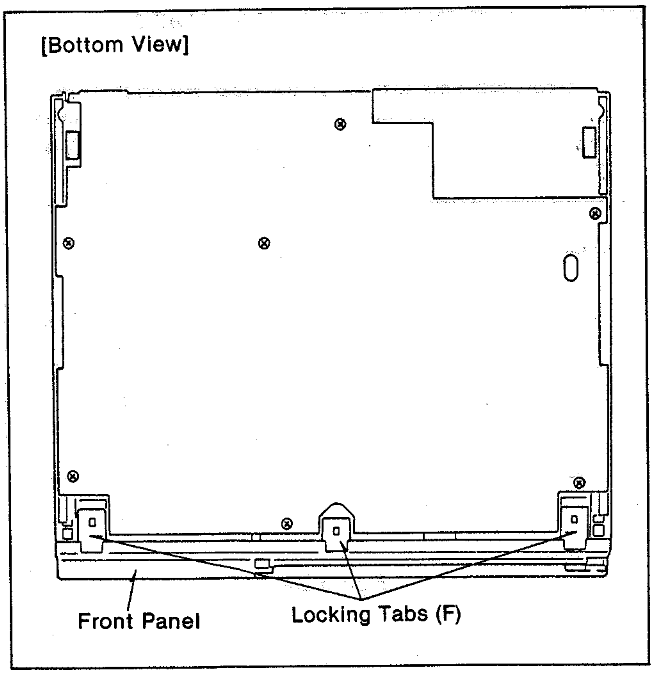

[Bottom View]
Front Panel
Locking Tabs (F)

Figure D6

2-2-5. Removal of the Front (1) and Front (2) C.B.A.

1. Unscrew the 7 screws (G) on the Front Panel (1) C.B.A. and Front Panel (2) C.B.A. together (Figure D7).
2. Carefully unlock the 2 locking tabs (H1) on the top of the Front Panel (1) C.B.A. and a locking tab (H2) on the bottom of the Front Panel (2) C.B.A. (Figure D7).
3. Carefully pull the Front Panel (1) and (2) forward and disconnect the connectors (I).
4. To separate the Front Panel (1) and Front Panel (2), disconnect the connector (J) carefully.

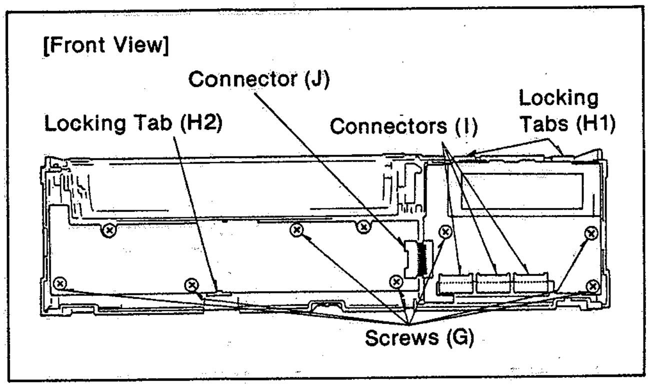

[Front View]
Connector (J)
Locking Tab (H2)
Connectors (I)
Locking Tabs (H1)
Screws (G)

Figure D7

2-2-6. Removal of the Video (2) and Video (3) C.B.A.

1. Unscrew 2 screws (K) and remove the C.B. Holder (Figure D8).
2. Carefully lift up the each C.B.A.

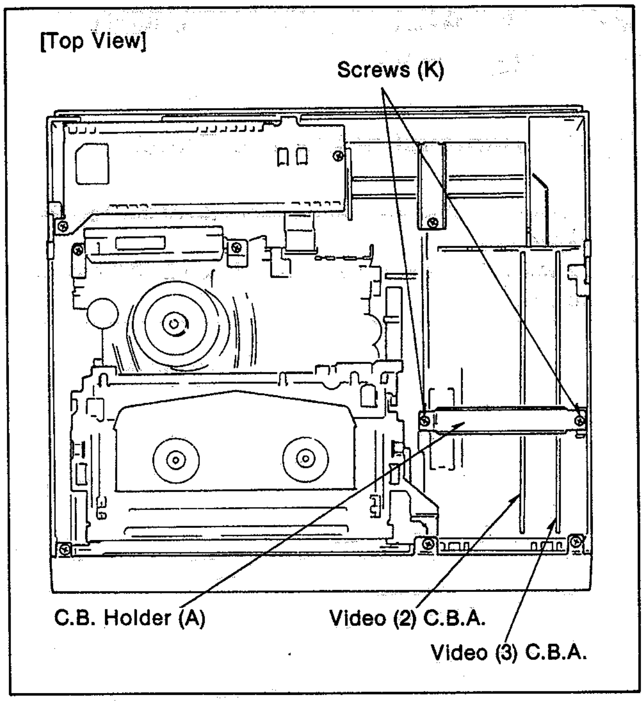

[Top View]
Screws (K)
C.B. Holder (A)
Video (2) C.B.A.
Video (3) C.B.A.

Figure D8

2-2-7. Removal of the System Control C.B.A. and the Audio C.B.A.

1. Unscrew a screw (L) and remove the C.B. Holder (B) (Figure D9).
2. Carefully lift the each C.B.A. upward.

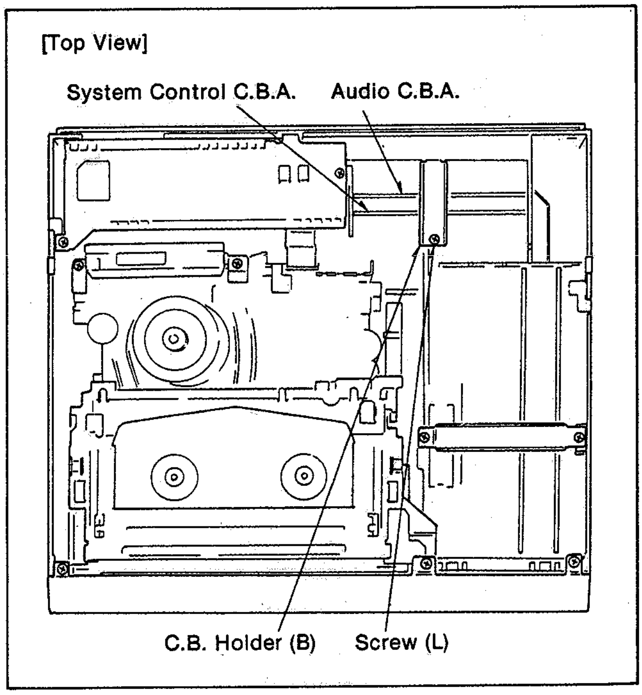

[Top View]
System Control C.B.A.
Audio C.B.A.
C.B. Holder (B)
Screw (L)

Figure D9

2-2-8. Removal of the Head Amp.

1. Unscrew the 2 screws (M) on the Head Amp C.B.A. (Figure D10).
2. Pull out the Head Amp.

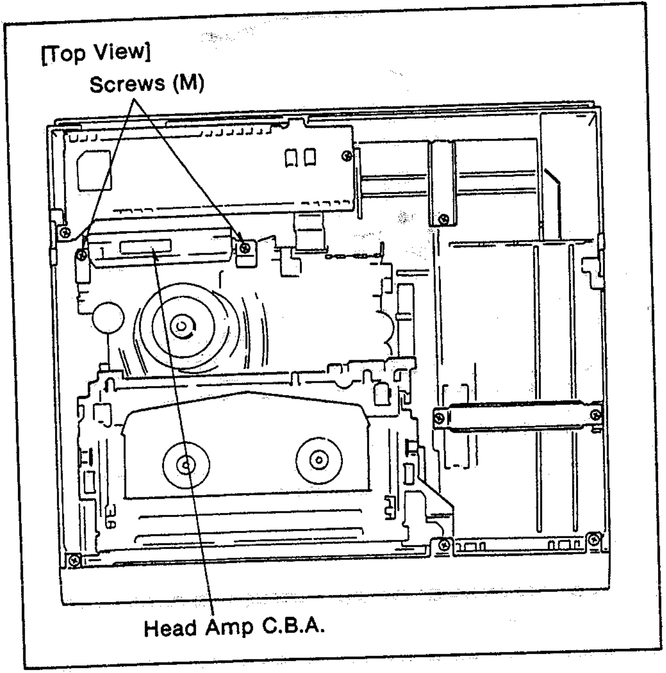

[Top View]
Screws (M)
Head Amp C.B.A.

Figure D10

2-2-9. Removal of the Power Unit

1. Unscrew the 2 screws (N-1) on the Power Unit (Figure D11).
2. Unscrew a screw (N-2) on the Power Unit and remove the GND lug terminal.
3. Unscrew the 3 screws (O) on the rear side (Figure D12).
4. Pull out the Power Unit.

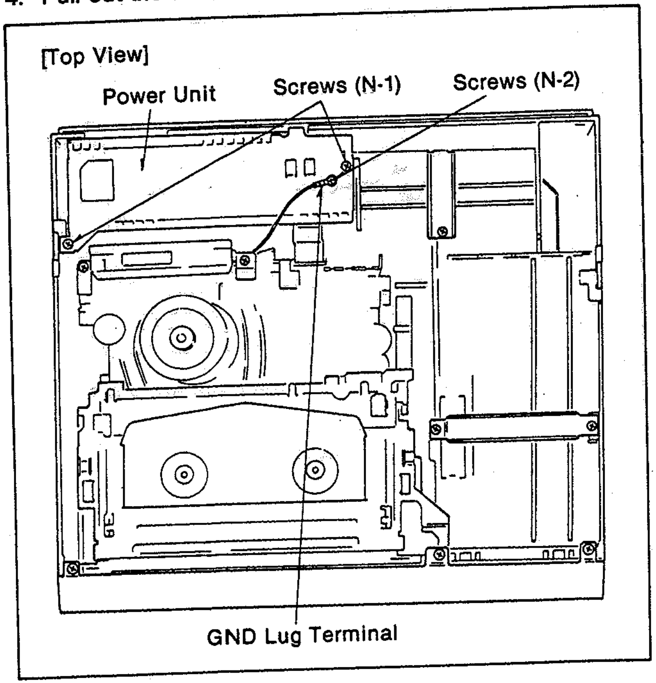

[Top View]
Power Unit
Screws (N-1)
Screws (N-2)
GND Lug Terminal

Figure D11

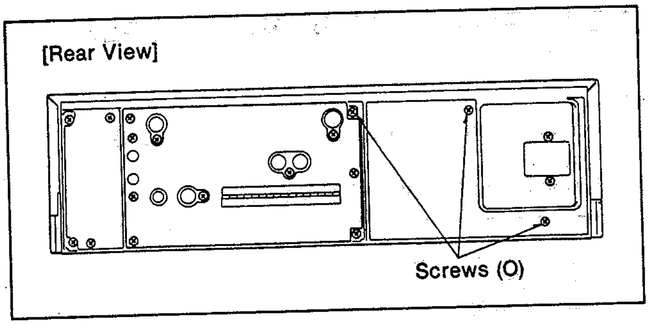

[Rear View]
Screws (O)

Figure D12

2-2-10. Removal of the Rear Jack C.B.A.

1. Unscrew the 6 screws (P-1, P-2) on the Rear Panel (Figure D13).
2. Unscrew the 2 screws (Q) on the Rear Jack C.B.A. (Figure D14).
3. Remove the Rear Jack C.B.A.

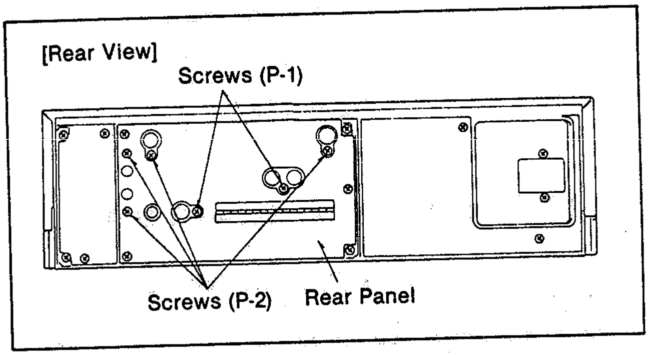

[Rear View]
Screws (P-1)
Screws (P-2)
Rear Panel

Figure D13

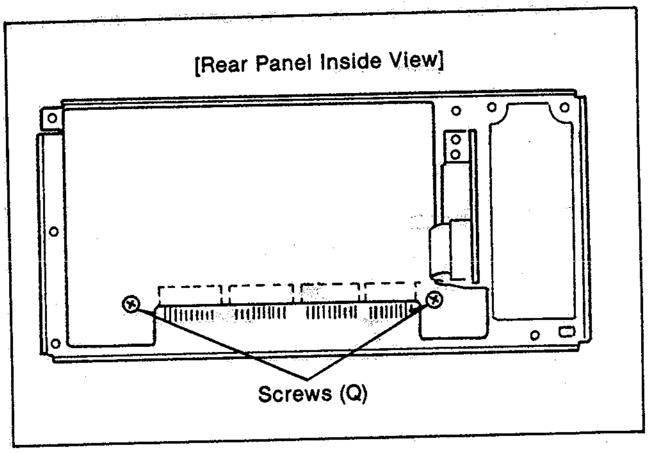

[Rear Panel Inside View]
Screws (Q)

Figure D14

2-2-11. Removal of the Mic Amp Sub C.B.A.

1. Unscrew the 2 screws (R) on the Mic Amp Sub C.B.A. (Figure D15).
2. Remove the Mic Amp Sub C.B.A.

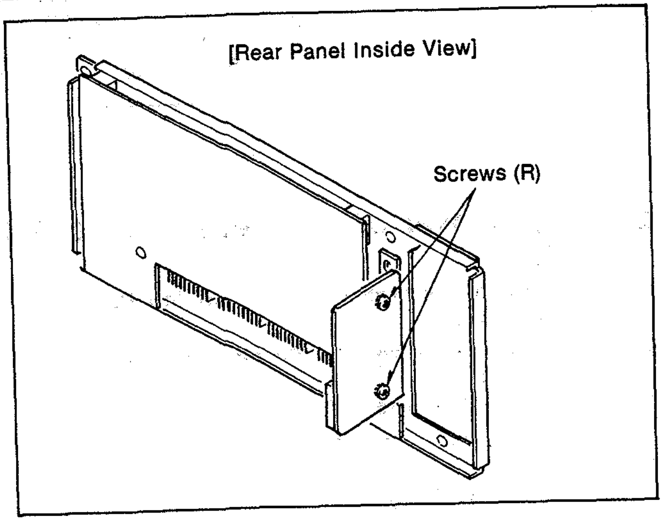

[Rear Panel Inside View]
Screws (R)

Figure D15

2-2-12. Removal of the Servo C.B.A.

1. Unscrew the 2 screws (S) on the Servo C.B.A. (Figure D16).
2. Open the Servo C.B.A. (Figure D17).
3. Disconnect a Flexible Cable (P2302) and the connectors (P2004, P2005, P2006 and P2301).
4. Close the Servo C.B.A. and then disconnect the 3 flexible cables (P2001, P2002 and P2003) and the 2 servo C.B.A. clamps (T).
5. Remove the Servo C.B.A.

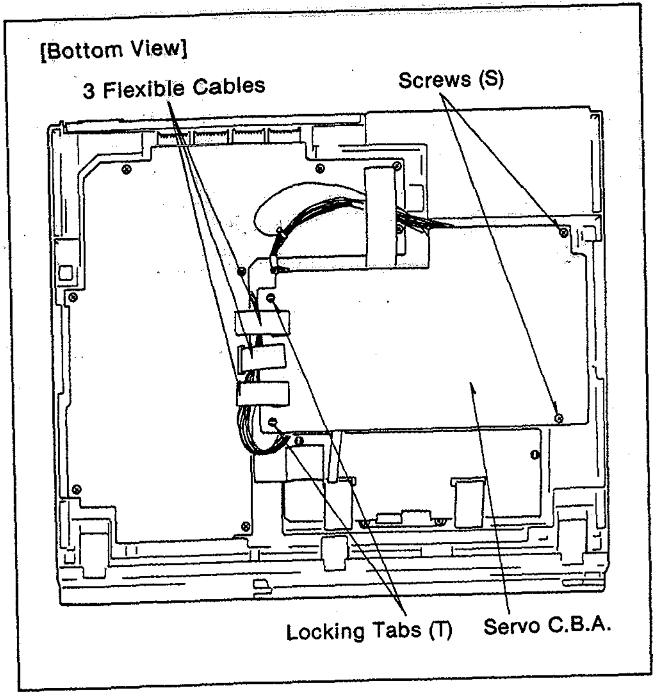

[Bottom View]
3 Flexible Cables
Screws (S)
Locking Tabs (T)
Servo C.B.A.

Figure D16

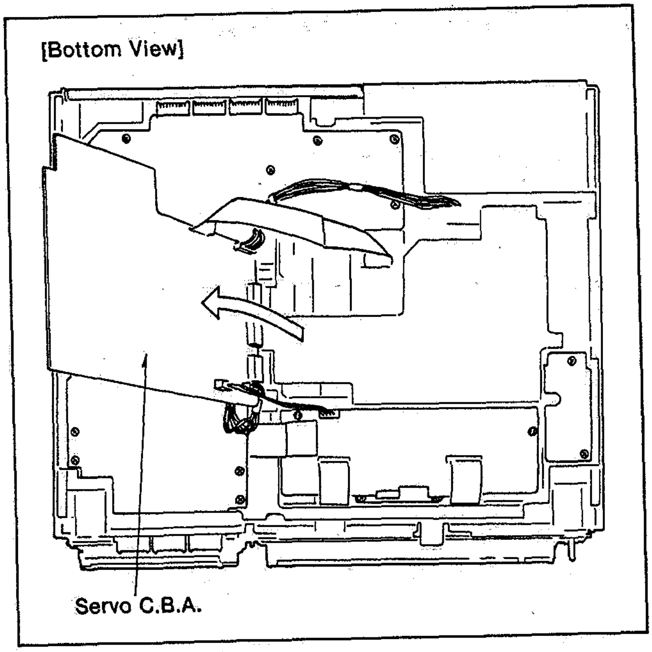

[Bottom View]
Servo C.B.A.

Figure D17

2-2-13. Removal of the Back Up Sub C.B.A.

1. Unscrew 2 screws (U) on the Back Up C.B.A. (Figure D18).
2. Lift the Back Up Sub C.B.A. out.

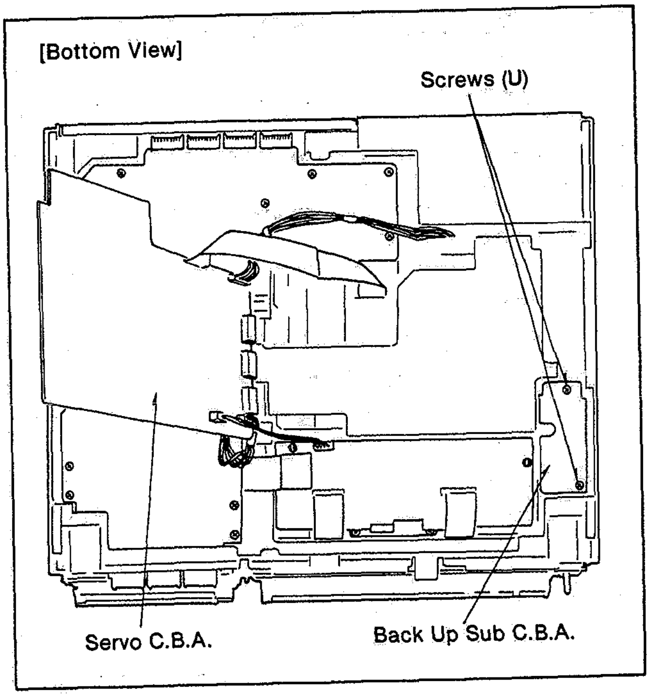

[Bottom View]
Screws (U)
Servo C.B.A.
Back Up Sub C.B.A.

Figure D18

2-2-14. Removal of the Mother C.B.A.

Note: Before removing the Mother C.B.A., be sure to remove the Power Unit, Front(1) and (2) C.B.A., Rear Jack C.B.A. Video (1), (2) and (3) C.B.A., Reel Servo and Syscon C.B.A. and Audio C.B.A.

1. Unscrew the 8 screws (V) on the Mother C.B.A. (Figure D19).
2. Disconnect the 4 Flexible Cable (P921, P922, P923, P924) from the Mother C.B.A.
3. Lift the Mother C.B.A. and then disconnect a flexible cable (P901) and the 2 connectors (P902 and P925).
4. Removal the Mother C.B.A.

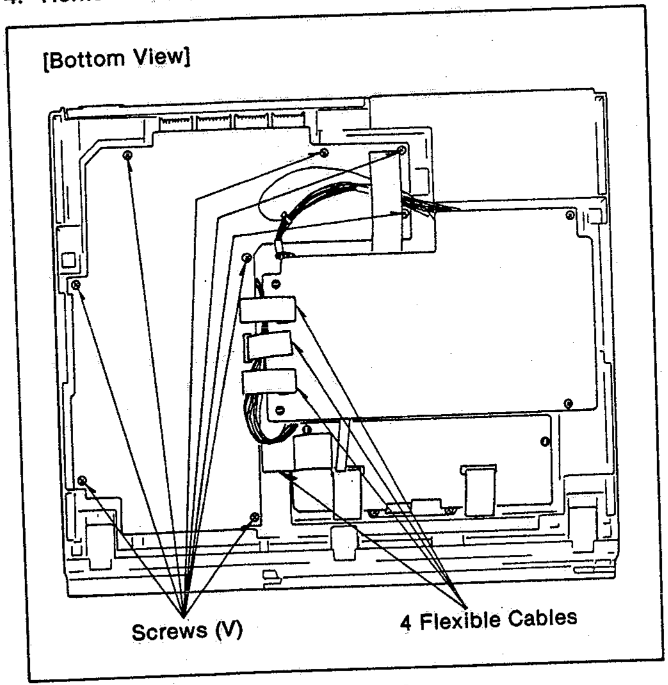

[Bottom View]
Screws (V)
4 Flexible Cables

Figure D19

2-2-15. Removal of the Reel Drive C.B.A.

1. Unlock the 2 clamps (W) on the Reel Drive C.B.A. (Figure D20).
2. Disconnect the 3 Flexible Cable (P2701, P2704 and P2705) and a connector (P2702).
3. Unsolder a connector (P2703) and then lift the Reel Drive C.B.A.

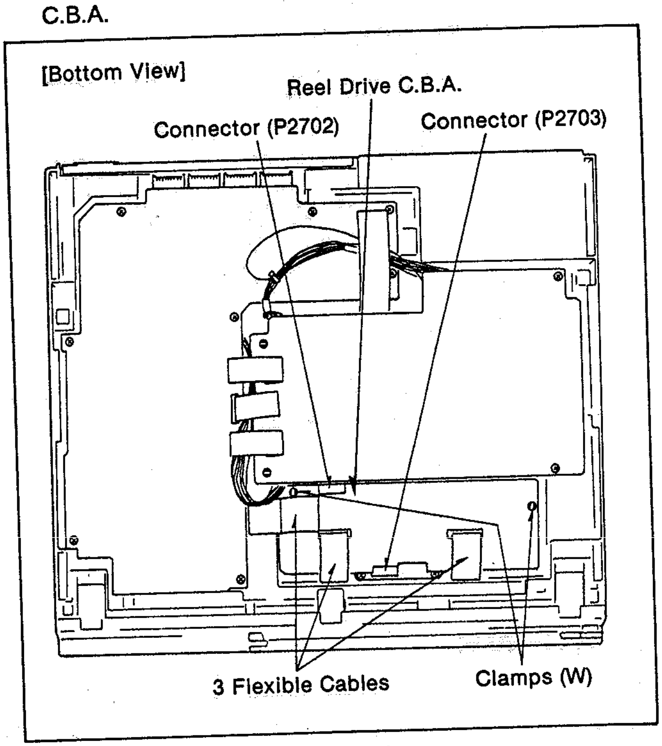

[Bottom View]
Reel Drive C.B.A.
Connector (P2702)
Connector (P2703)
3 Flexible Cables
Clamps (W)

Figure D20

2-2-16. Removal of the Cassette Compartment Unit

1. Unscrew the 2 screws (X-1) and a screw (X-2)(Figure D21).
2. Disconnect 2 wires and 4 wires from P1508 on the right side of the Cassette Compartment Unit (Figure D21).
3. Remove the Top Plate.

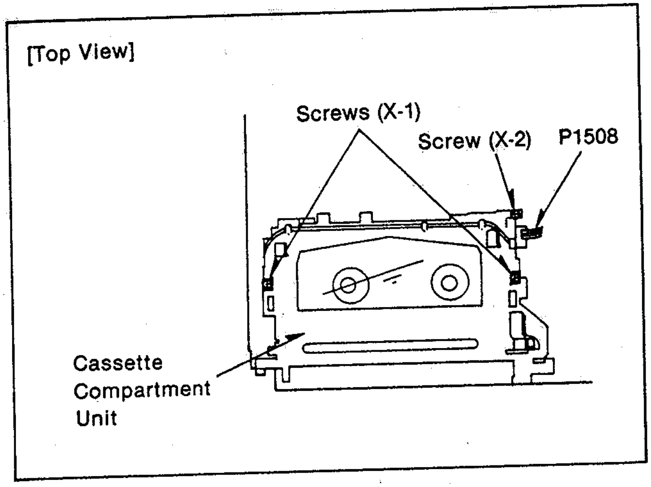

[Top View]
Screws (X-1)
Screw (X-2)
P1508
Cassette Compartment Unit

Figure D21

4. Remove a cassette holder unit.

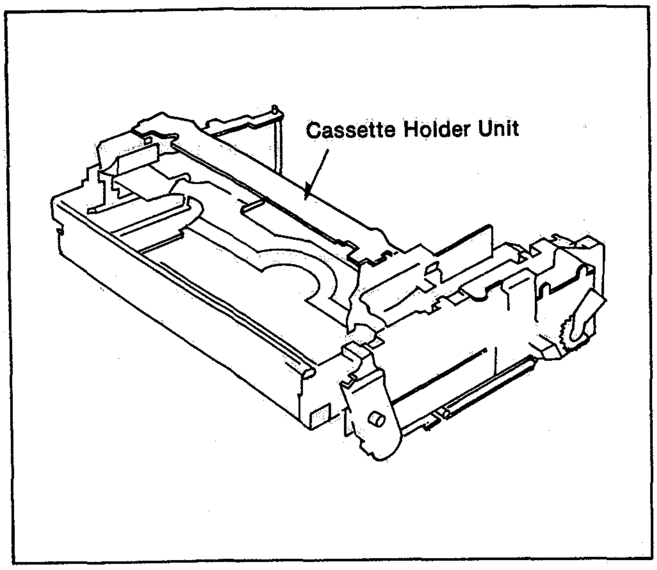


Figure D22

5. Unscrew the 4 screws (Y) and remove the Cassette Compartment Unit.

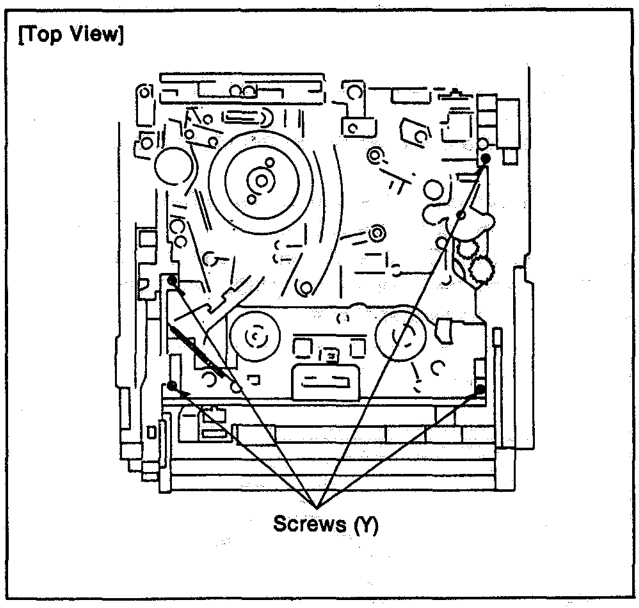
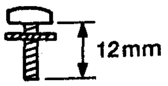
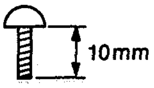
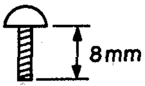
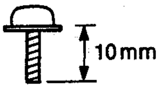
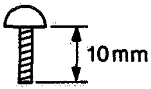
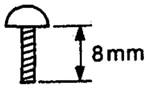
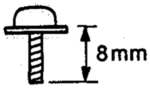
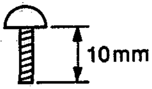
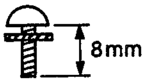
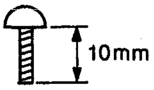
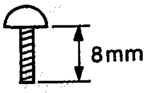
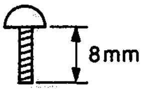
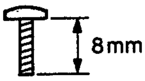
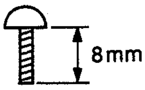
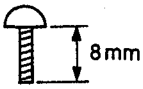


Figure D23

Note: When installing the Cassette Compartment Unit, refer to Mechanical Adjustment Procedures.

SCREWS

(A)  12mm VHD0426 (SILVER)	(B)  10mm XTV3+10G (GOLD)	(C), (P-2)  8mm XTV3+8FFZ (BLACK)	(D)  10mm XTW3+10PR (RED)	(G)  10mm XTV4+10JR (RED)
(K), (L)  8mm XTV3+8FR (RED)	(M)  8mm XTW3+8LR (RED)	(N-1), (S), (U), (V)  10mm XTV3+10GR (RED)	(N-2), (R)  8mm XYE3+EF8 (GOLD)	(O)  10mm XTV3+10FZ (BLACK)
(P-1)  8mm XTV3+8GFZ (BLACK)	(Q)  8mm XTV3+8F (GOLD)	(X-1)  8mm XTB3+8G (GOLD)	(X-2)  8mm XTV3+8G (GOLD)	(Y)  8mm XTV26+8FR (RED)

SECTION 3

MECHANISM

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3-1. PARTS LOCATION

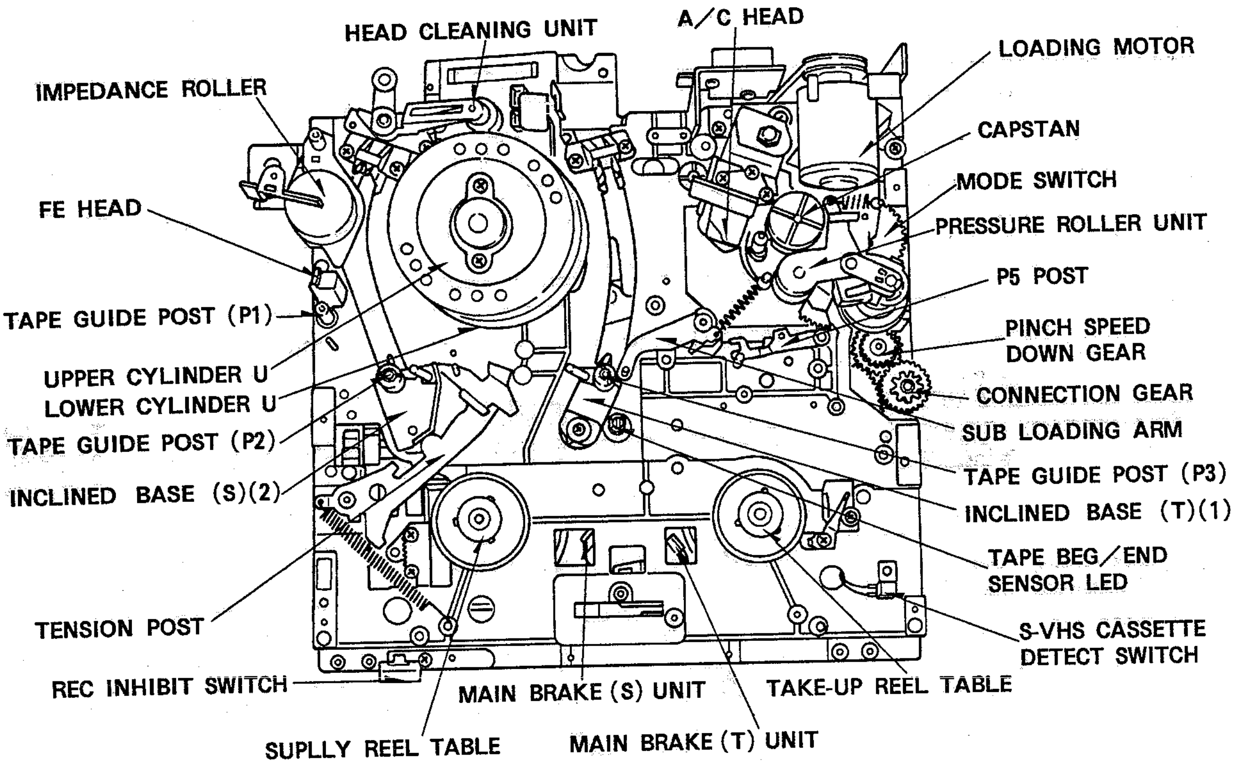

HEAD CLEANING UNIT
A/C HEAD
LOADING MOTOR
IMPEDANCE ROLLER
CAPSTAN
MODE SWITCH
FE HEAD
PRESSURE ROLLER UNIT
P5 POST
TAPE GUIDE POST (P1)
PINCH SPEED DOWN GEAR
UPPER CYLINDER U
LOWER CYLINDER U
CONNECTION GEAR
SUB LOADING ARM
TAPE GUIDE POST (P2)
TAPE GUIDE POST (P3)
INCLINED BASE (S)(2)
INCLINED BASE (T)(1)
TAPE BEG/END SENSOR LED
TENSION POST
S-VHS CASSETTE DETECT SWITCH
REC INHIBIT SWITCH
MAIN BRAKE (S) UNIT
TAKE-UP REEL TABLE
SUPLLY REEL TABLE
MAIN BRAKE (T) UNIT

Figure M1

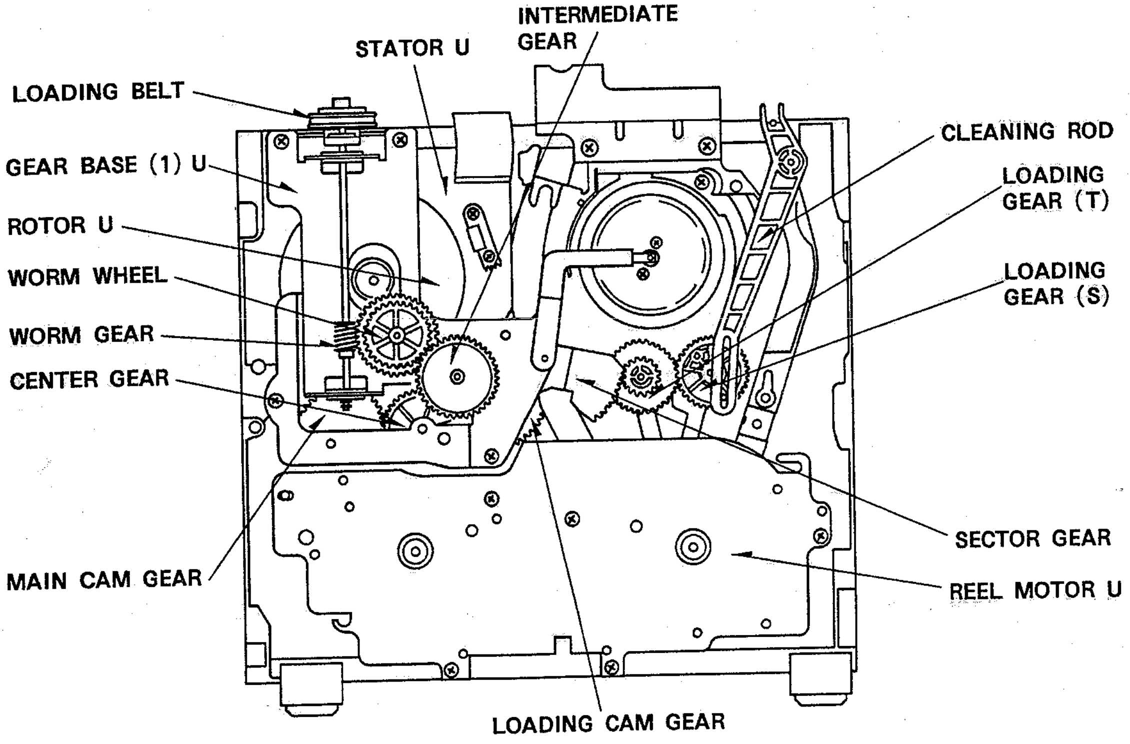
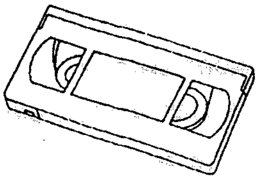
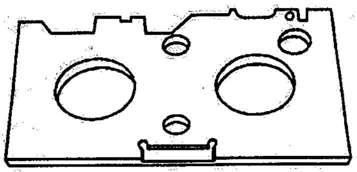
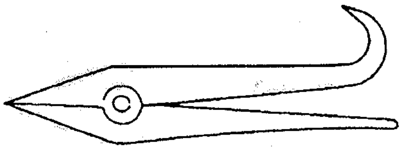
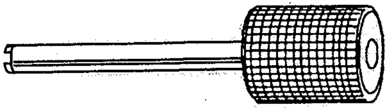
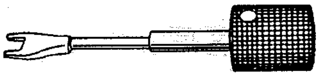
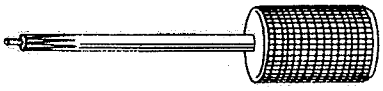
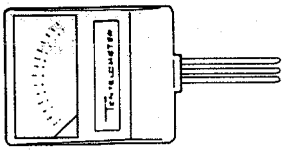
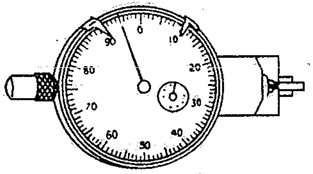
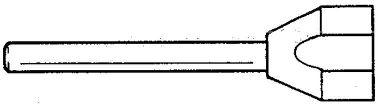
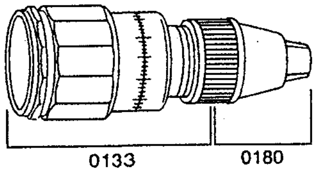
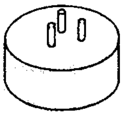
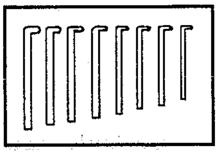
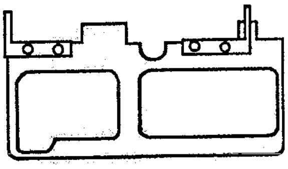
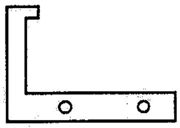
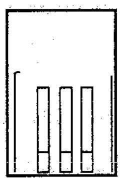
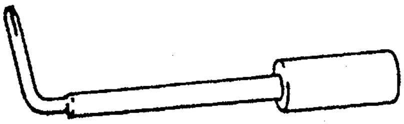
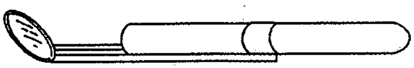
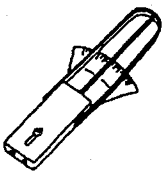
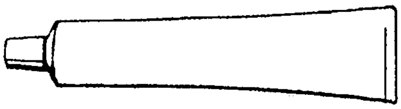
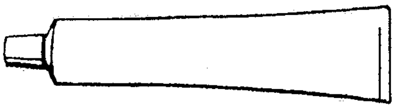

INTERMEDIATE GEAR
STATOR U
LOADING BELT
CLEANING ROD
GEAR BASE (1) U
LOADING GEAR (T)
ROTOR U
WORM WHEEL
LOADING GEAR (S)
WORM GEAR
CENTER GEAR
SECTOR GEAR
MAIN CAM GEAR
REEL MOTOR U
LOADING CAM GEAR

Figure M2

3-2. SERVICING FIXTURES AND TOOLS

The specified servicing fixture must be used to conduct adjustment.
The folloeing fixtures, tools and measuring equipments are required to conduct complete Mechanical Adjustments.

VFM8080HQFP ; VHS Alignment Tape 	VFK1012 ; Post Adjustment Plate 	VFK0335 ; Retaining Ring Remover 
VFK0329 ; Post Adj. Screwdriver 	VFK0328 ; H-Position Adj. Screwdriver 	VFK0330 ; Fine Adj. Screwdriver (3mm) 
VFK0132 ; Back Tension Meter (Tentelometer, Made in U.S.A) 	VFK0190 ; Reel Table Height Fixture  	VFK0951 ; Centering Fixture 
VFK0133 ; Dial Torque Gauge VFK0180 ; Plastic Clamper Only  	VFK0134 ; Adaptor for VFK0133 	VFK0326 ; Hex. Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2, 2.4, 3 mm) 
VFK0236 ; Tension Post Adj. Plate 	VFK0806 ; Tension Sensor Adj. Fixture 	VFK27 ; Head Cleaning Stick 
VFK0269 ; L Type Screwdriver 	VFM0948 ; Check Light 	VFK66 ; Fan Type Tension Gauge 
VFK0680 ; S.C.R. Grease (White) (for plastic part) 	MOR265 ; Morlytone Grease (Black) (for metal part) 	VFK0131 ; High Quality Oil (for Capstan and P5 Post) Cleaning Liquid (Alchol) (Tape Transport Rubber Parts etc.) << PURCHASE LOCALLY >>

3-3. HOW TO EJECT MANUALLY

If the electrical circuit is defective and the action of unloading and front unloading don't work properly, it is possible to eject manually as follows.

1. Take out the Main AC.
2. Release the direction as shown in Figure M3.
3. Release the Wormshaft to clockwise unit cassette is ejected.

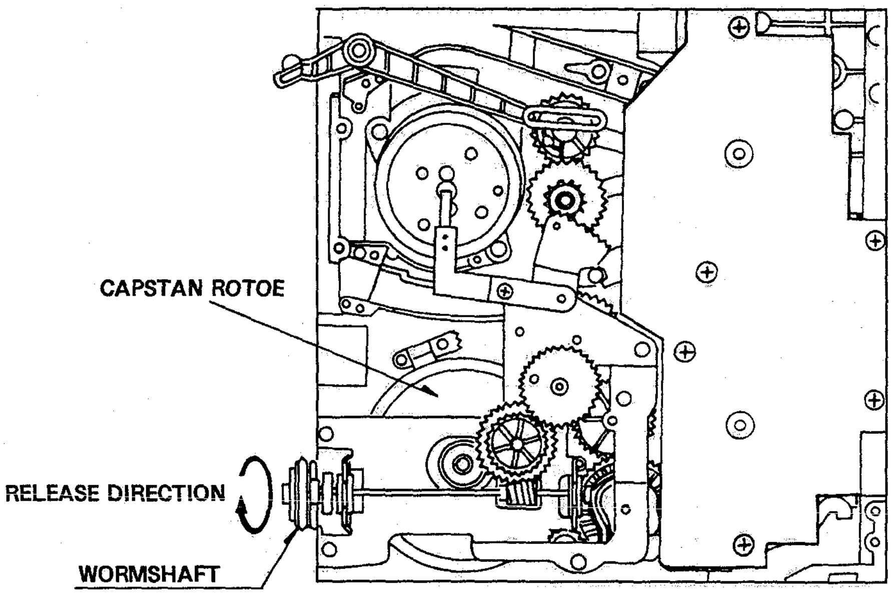

CAPSTAN ROTOE
RELEASE DIRECTION
WORMSHAFT

Figure M3 How to Eject Manually

3-4. MAINTENANCE PROCEDURES

3-4-1. REGULAR MAINTENANCE

The purpose of periodic maintenance is to preserve the functioning of this machine throughout its useful life. The user or service dealer should perform these maintenance regularly to ensure that maximum utility is obtained from the machine.

The VCR is a complicated place of equipment. It contains many belts, rollers, heads etc., which become worn, and deterlorate as time goes by, causing trouble. Dust and dirt will also impede the proper functioning of the machine. In light of this, it is very important that overall maintenance be done according to the maintenance chart to maintain the functions of the VCR, and to avoid accidental problems. This maintenance should also be performed after any repairs are done on the equipment.
The VCR used for business applications requires particular attention for several reasons. The installation conditions and applications are not always the best. Long use times, or poor environmental conditions may adversely affect the lifespan and performance of the machine. Regular maintenance assures that the purchaser obtains the maximum value for his expenditure. Accordingly, the necessity of regular maintenance should be fully explained at the time of sale, as well as during after-sale repairs.

3-4-2. MAINTENANCE CHART

The following periodic maintenance is required to prolong the life of the machine.

Ref. No. IN P/L	Parts Name	Hour							
		500	1000	2000	3000	4000	5000	6000	10000
	Tape Transporter	●	●	●	●	●	●	●	●
	A/C Head U	●	●	●	●	●	●	●	◎
	FE Head	●	●	●	●	●	●	●	◎
	Upper Cylinder	●	◎	◎	◎	◎	◎	◎	◎
	Cylinder U	●	●	●	●	●	●	●	◎
	Capstan Shaft	●	●	●△	●	●△	●	●△	◎
	Housing U								◎
	Thrust Screw								◎
	Oil Seal								◎
	Capstan Roter U								◎
	Pressure Roller U			◎		◎			◎
	Loading Belt			◎		◎			◎
	Loading Motor U								◎

Ref. No. IN P/L	Parts Name	Hour							
		500	1000	2000	3000	4000	5000	6000	10000
	Inclined (S) U								▲
	Inclined (T) U								▲
	Head Cleaning U		◎	◎	◎	◎	◎	◎	◎
	Mode Switch						◎		◎
	Stator Base Unit						◎		◎
	Supply Reel Table U						◎		◎
	Takeup Reel Tuble U						◎		◎
	Loading Cam Gear								▲
	Main Cam Gear								▲
	Worm Shaft								×
	Worm Wheel								×
	P5 Arm U								△
	Battery	Approx.5 years							

＊NOTE :

Symbol	Maintenance	Requirement	Remark
●	Cleaning	Ethyl-alcohol or Cleaning Liquid (Purchase locally)	Wipe dirt from the parts using soft cloth impregnated with Ethyl-Alcohol. Note: When cleaning rubber parts, avold using excessive alcohol since it may accelerate deterioration of these parts. After cleaning with alcohol, wipe the alcohol quickly and thoroughly.
◎	Replacement		
△	Lubrication	High Quality Spindle Oil (Purchase locally)	Supply one or two drops of oil.
▲	Greasing	Molytone Grease (MOR265)	Wipe the old grease and apply new grease.
×	Greasing	S.C.R. Grease (VFK0680)	Wipe the old grease and apply new grease.

3-4-3. LUBRICATION PROCEDURES OF THE CAPSTAN SHAFT

1. Remove the Pressure rollerUnit.
2. Remove the Thrust Screw.
3. Apply two drops of the oil (VFK0131) on the top of Capsutan Shaft as shown in Fig M6-A.

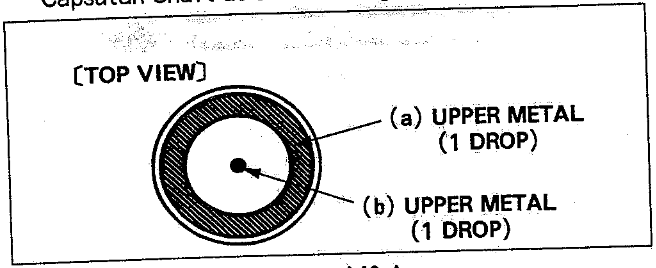
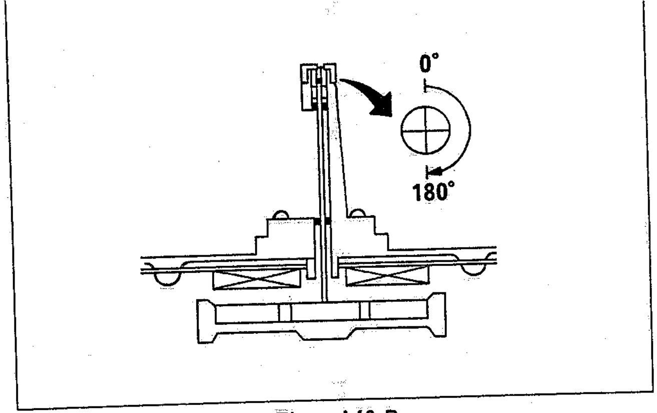

[TOP VIEW]
(a) UPPER METAL (1 DROP)
(b) UPPER METAL (1 DROP)

Figure M6-A

4. Turn the Thrust Adjustment Screw slowly to clockwise until the Capstan Rotor just starts turning (separate from the Capustan Stator).
5. Turn the Thrust Adjustment Sscrew another 180° clockwise as shown in Figure M6-B.
6. Install the Pressure Roller Unit.
7. Wipe the extra oil.

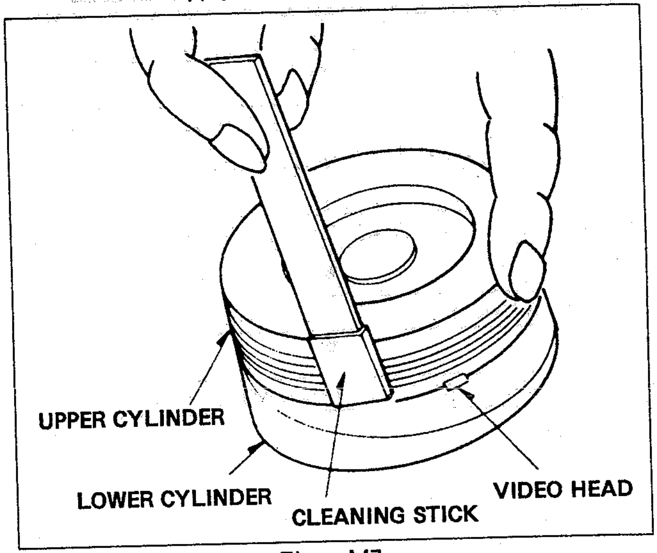


FiguerM6-B

3-4-4. PROCEDURES FOR CLEANING OF THE CYLINDER UNIT

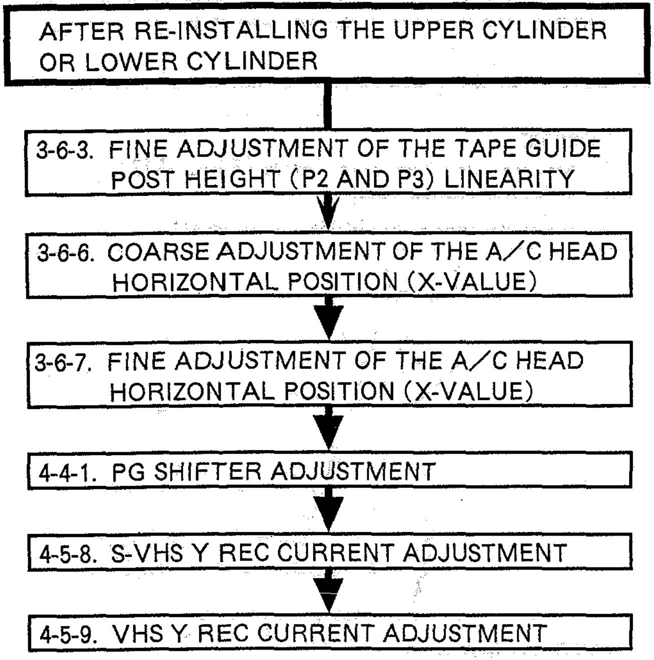
1. Position the Video Head to permit access for cleaning and hold the upper cylinder to keep it from turning while cleaning.
2. Gently rub the Video Head in direction of tape travel with Head Cleaning Stick moistened with Cleaning.
3. Repeat for the other video heads (FigureM7).

Note: 1.Do not rub vertically.
2.Do not apply any pressure to heads.

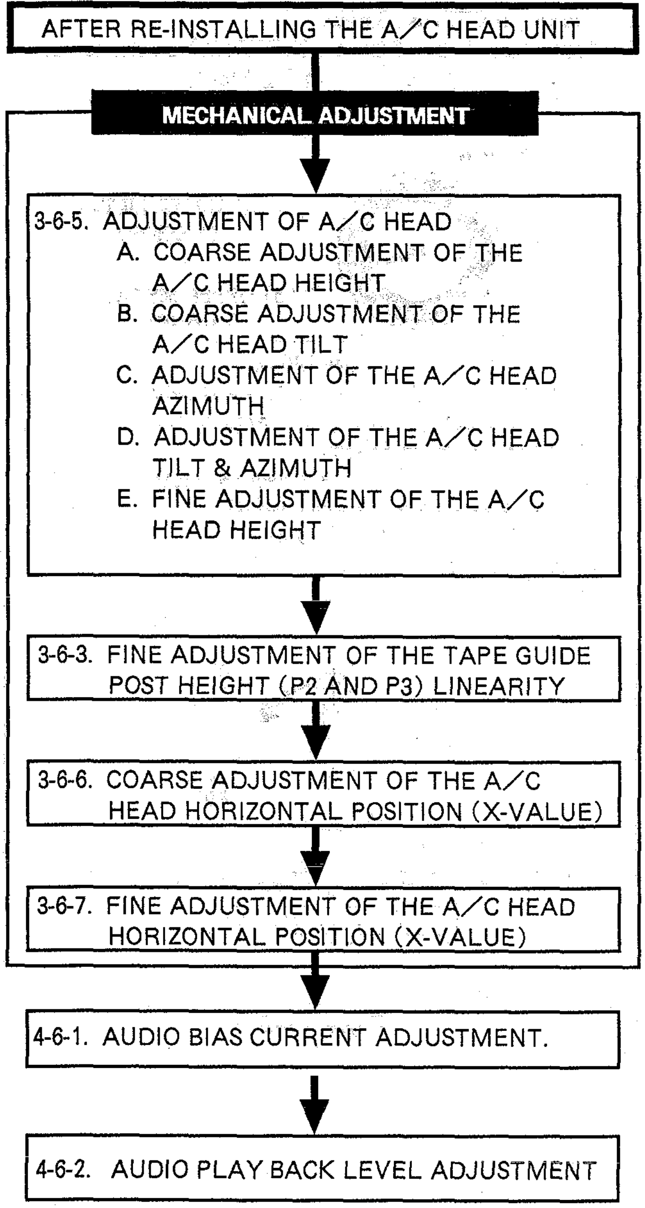

UPPER CYLINDER
LOWER CYLINDER
CLEANING STICK
VIDEO HEAD

FigureM7

3-4-5. ADJUSTMENTS AFTER RE-INSTALLING THE UPPER CYLINDER, LOWER CYLINDER


AFTER RE-INSTALLING THE UPPER CYLINDER OR LOWER CYLINDER
3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT (P2 AND P3) LINEARITY
3-6-6. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)
3-6-7. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)
4-4-1. PG SHIFTER ADJUSTMENT
4-5-8. S-VHS Y REC CURRENT ADJUSTMENT
4-5-9. VHS Y REC CURRENT ADJUSTMENT

3-4-6. ADJUSTMENTS AFTER RE-INSTALLING THE A/C HEAD UNIT


AFTER RE-INSTALLING THE A/C HEAD UNIT
MECHANICAL ADJUSTMENT
3-6-5. ADJUSTMENT OF A/C HEAD
A. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT
B. COARSE ADJUSTMENT OF THE A/C HEAD TILT
C. ADJUSTMENT OF THE A/C HEAD AZIMUTH
D. ADJUSTMENT OF THE A/C HEAD TILT & AZIMUTH
E. FINE ADJUSTMENT OF THE A/C HEAD HEIGHT
3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT (P2 AND P3) LINEARITY
3-6-6. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)
3-6-7. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)
4-6-1. AUDIO BIAS CURRENT ADJUSTMENT.
4-6-2. AUDIO PLAY BACK LEVEL ADJUSTMENT

3-5. MECHANICAL PARTS REPLACEMENT PROCEDURES

3-5-1. REPLACEMENT OF THE UPPER CYLINDER UNIT

1. First remove two screws as shown in Figure M10-A. Then unsolder of the soldered portions indicatedby arrows on the Upper Cylinder, and finally remove the Upper Cylinder.

Note: Soldered portion can be easily removed by using solder sucking wire, etc.

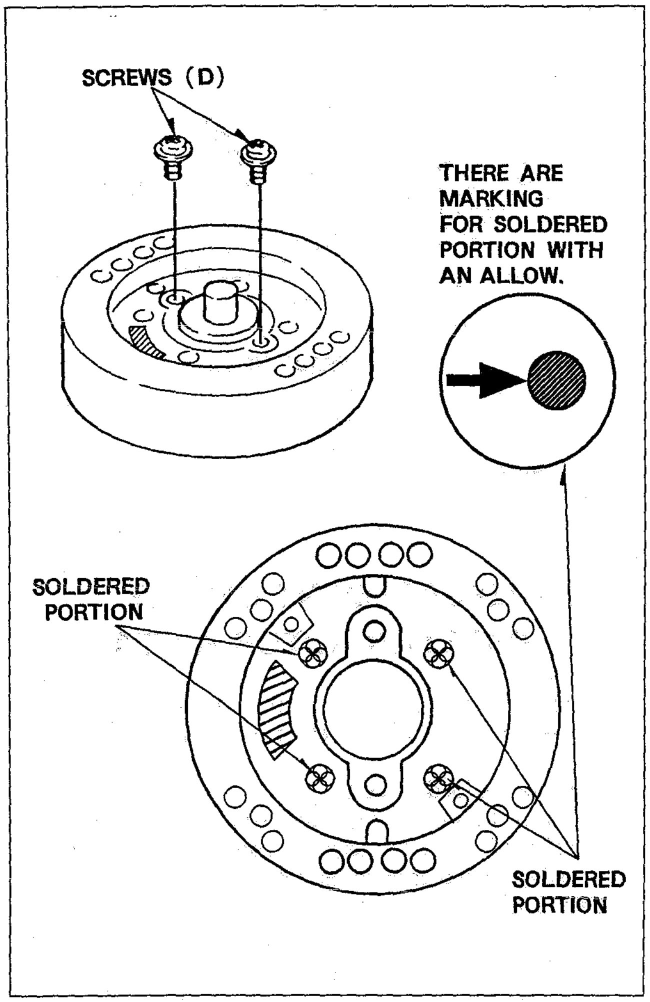

SCREWS (D)
THERE ARE MARKING FOR SOLDERED PORTION WITH AN ALLOW.
SOLDERED PORTION
SOLDERED PORTION

Figure M10-A

2. The Upper Cylinder unit can be reinstalled by reversing the removal procedure. However, when Upper Cylinder is installed, be extremely carefully so that white portion of P.C.Board of Upper Cylinder correctly matches the white portion of bottom cylinder as shown in Figure M10-B.

Note: If the Upper Cylinder Unit is reversal installed, no color will appear when playing back pre-recorded tapes.

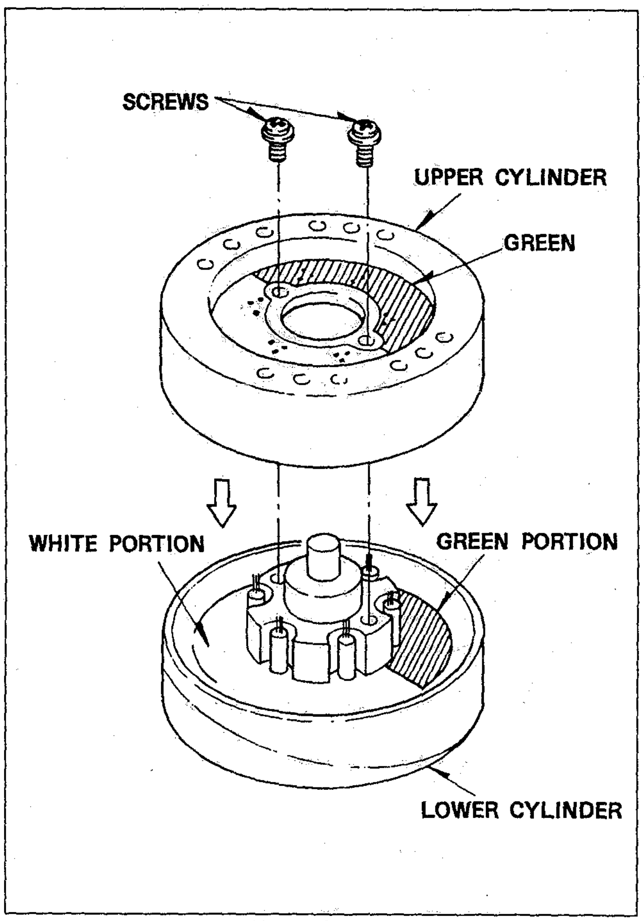

SCREWS
UPPER CYLINDER
GREEN
WHITE PORTION
GREEN PORTION
LOWER CYLINDER

Figure M10-B

3-5-2. REPLACEMENT OF THE LOWER CYLINDER UNIT

1. Unscrew the 2 screws and remove the Head Amp.
2. Remove the Cleaning rod from bottom side.
3. Unscrew 3 screws (A). Since there is very little clearance between DD Cylinder (Lower Cylinder) Unit and Chassis, remove the Cylinder gently and carefully (Figure M11).

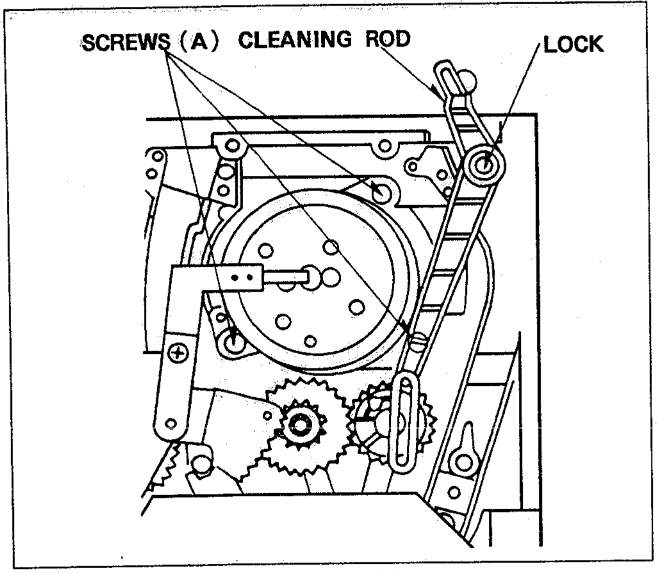


Figure M11

4. Reinstall the new DD Cylinder (Lower Cylinder) Unit in the chassis, tighten the 3 screws (A). Then connect a connectors and reinstall the Cleaning Rod.
5. Re-install the Head Amp C.B.A.

Note: After reinstall the Upper Cylinder Unit should be perform Mechanical and Electrical adjustment (Refer to 3-4-5. Maintenance Procedures).

3-5-3. REPLACEMENT OF THE A/C HEAD (1) UNIT

1. Disconnect a connector (H)(Figure M12).

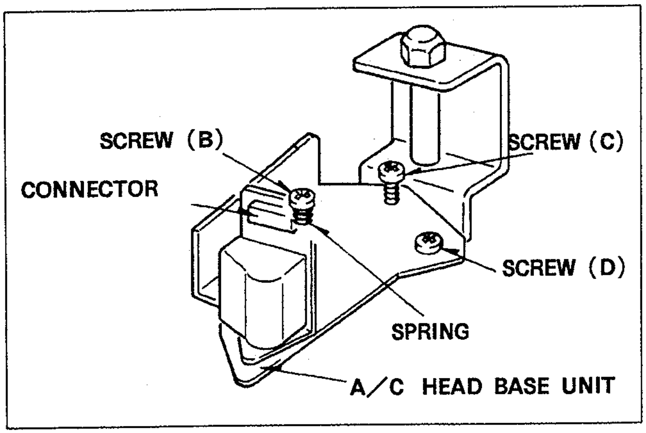


Figure M12

2. Unscrew 3 (B)(C)(D) screws with spring and then remove the A/C Head Unit (Figure M12).
3. The A/C Head (1) Unit can be reinstalled by reversing the removal procedure.

Note: After reinstall the A/C Head Unit should be perform Mechanical and Electrical adjustment (Refer to 6-4-6. Maintenance Procedures).

3-5-4. REPLACEMENT OF THE FULL ERASE HEAD

1. Disconnect a connector (J) and unscrew a screw (E) and remove the Full Erase Head (Figure M13).

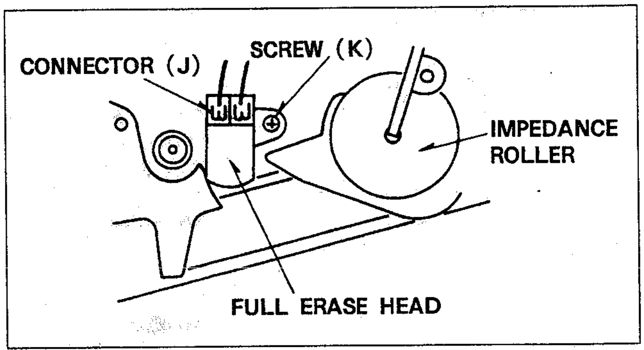


Figure M13

3. The new Full Erase Head can be reinstalled by reversing the removal procedure.

3-5-5. REPLACEMENT OF THE CAPSTAN ROTOR & STATOR

When replacing the Capstan stator unit the Center Fixing Tool must be used to fix the center of Capstan Stator Unit.

1. Remove the loading belt.
2. Unscrew the 4 (F) screws and remove Gear base Unit.
3. Carefully lift up the capstan rotor from the capstan housing, taking care so as not loose the 2 oil seals as shown in Figure M14-A.

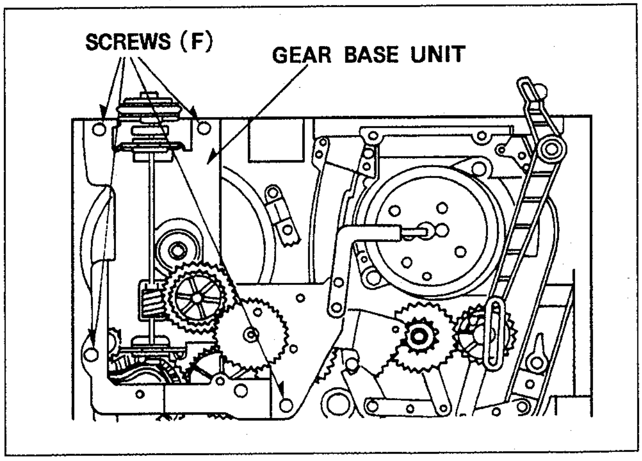


Figure M14-A

4. Remove the 2 oil seals.
5. Unscrew the 3 (G) screws and remove Capstan Stator.
6. Place the capstan stator unit into position.
7. Loosely tighten the 3 (G) screws.
8. Insert the Center Fixing Tool as shown in Figure M14-B.

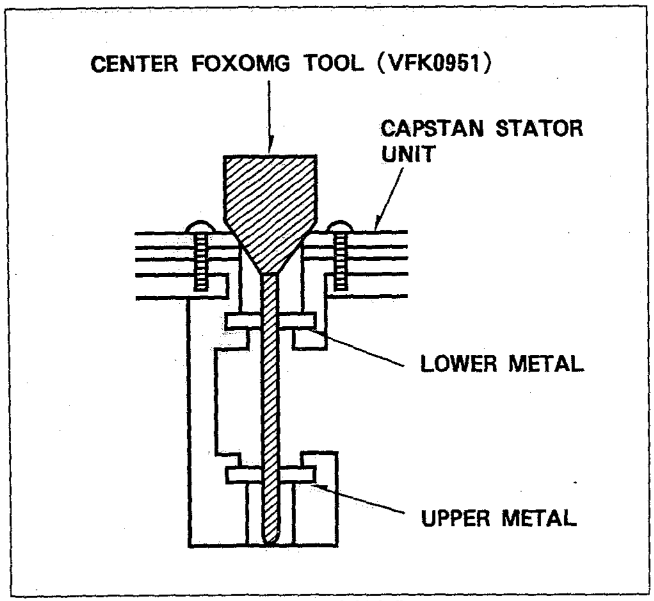

CENTER FOXOMG TOOL (VFK0951)
CAPSTAN STATOR UNIT
LOWER METAL
UPPER METAL

Figure M14-B

9. Tighten the 3 screws (G).
10. Remove the center fixing tool.
11. The new capstan rotor unit can be reinstalled by reversing the removal procedure.

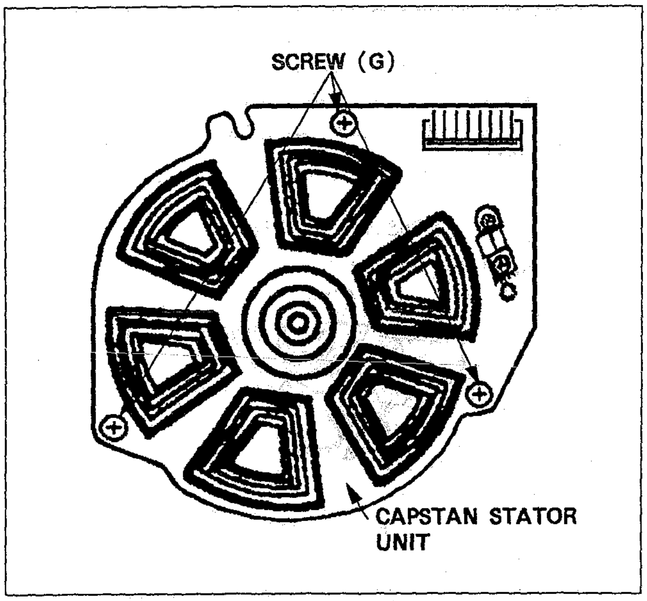

SCREW (G)
CAPSTAN STATOR UNIT

Figure M14-C

3-5-6. REPLACEMENT OF THE CAPSTAN HOUSING UNIT

1. Remove the pressure Roller Unit.
2. Remove the Sub post spring from the hook of Capstan Housing.
3. Unscrew the 3 screws (H) and remove Capstan Housing.
4. Remove the 2 oil seals and thrust screw.
5. Replace the new Capstan Housing, 2 oil seals and thrust screw at same time.
6. Re-install the Capstan Housing Unit by reversing the remove procedure.

Note: After re-installing the thrust screw adjustment of the thrust screw are required. Replace the new Capstan Rotor, 2 oil seals and thrust screw at same time. After re-installing the capstan rotor or capstan stator confirmation of FG out put level and adjustment of FG head gap are required.

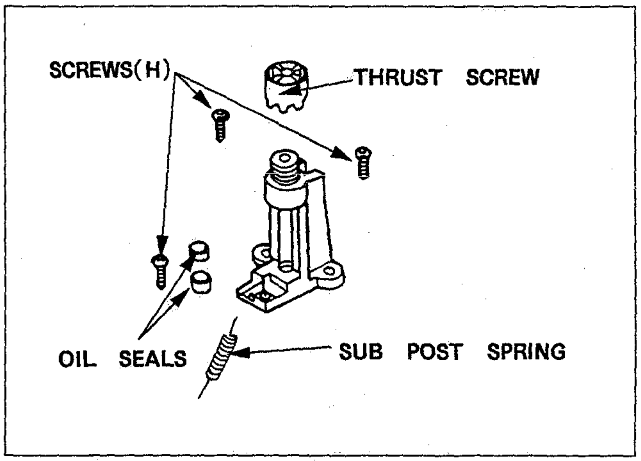

SCREWS(H)
THRUST SCREW
OIL SEALS
SUB POST SPRING

Figure M15

3-5-7. REPLACEMENT OF THE INCLINED BASE (S),(T)

《SUPPLY SIDE》

1. Unscrew a screw (I) and remove the head cleaning plate unit as shown in Figure M16-A.
2. Unscrew the 2 screws (J) and remove the post stopper.

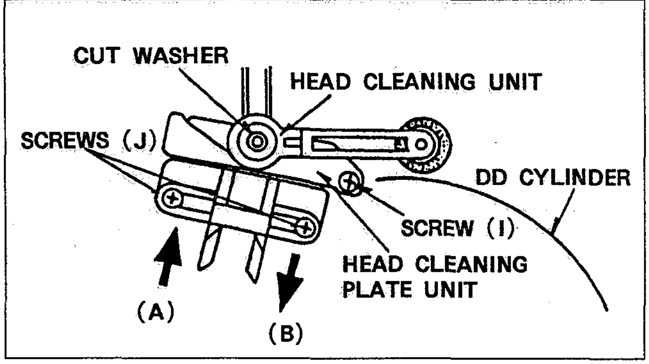

CUT WASHER
HEAD CLEANING UNIT
SCREWS (J)
DD CYLINDER
SCREW (I)
HEAD CLEANING PLATE UNIT
(A)
(B)

Figure M16-A

3. Remove the P2 post unit from loading arm (S) as shown in Figure M16-B.

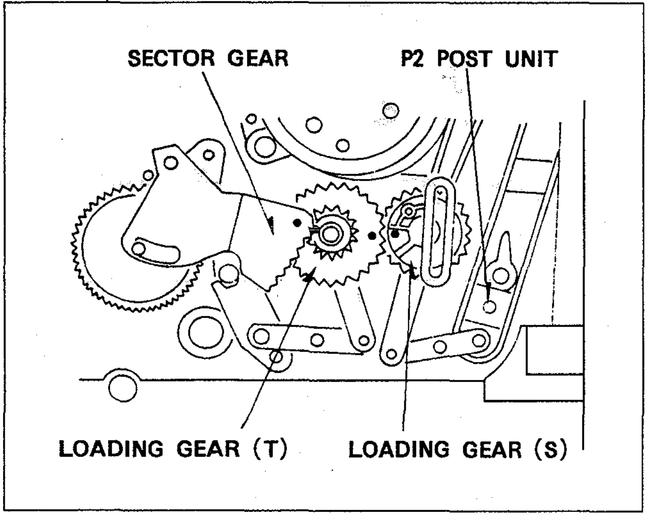

SECTOR GEAR
P2 POST UNIT
LOADING GEAR (T)
LOADING GEAR (S)

Figure M16-B

4. Pull out the Inclined base (S) from loading base.
5. The new inclined base unit can be reinstalled by reversing the removal procedure.

Note: Install post stopper pushing the arrow direction (A), (B) as shown in Figure M16-A. After re-installing the inclined base (S) confirmation of tape interchangeability and P2, P3 posts adjustments are required.

《TAKE-UP SIDE》

1. Unscrew a screw (K) and remove the inclined base (T) as show in Figure M16-C.
2. Install the inclined base (T) so that the tip of inclined base is center on the Plate Hole and then tighten screw (K).

Note: After re-installing the inclined base (T) confirmation of tape interchangeability and inclined base adjustment are required.

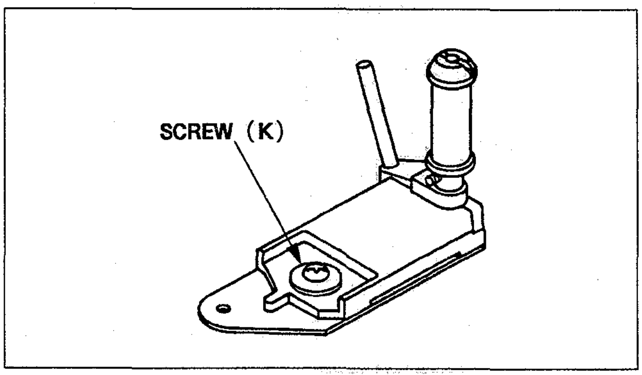


Figure M16-C

3-5-8. REPLACEMENT OF THE P5 POST

1. Remove the top cover and cassette holder.
2. Rotate the loading motor to clockwise, until the stop mode.
3. Remove the pressure roller unit.
4. Remove the pinch cam (Ref. to Replacement of the mode switch) and P5 pull out sector gear as shown in Figure M17.

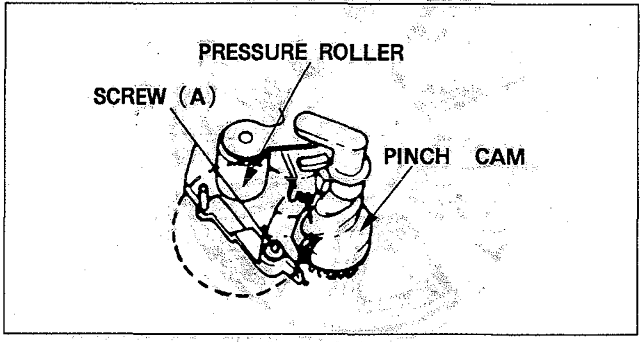

PRESSURE ROLLER
SCREW (A)
PINCH CAM

Figure M17

5. Unscrew a Nut (A) and Remove the P5 Post.
6. The new P5 post can be reinstalled by reversing the removal procedure.

Note: After-reinstalling the P5 post confirmation of tape waving and P5 post height adjustment are required.

3-5-9. REPLACEMENT OF THE REELUNIT

1. Remove 6 screws (L) and carefully lift the DD Reel Unit.
2. Disconnect a connector.

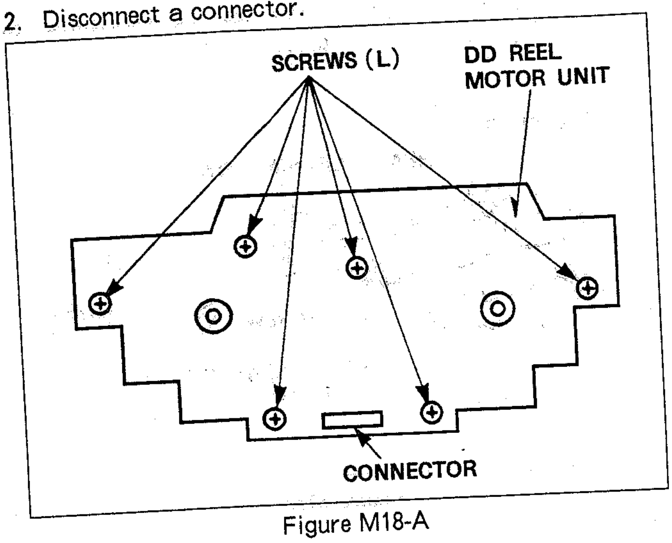

SCREWS (L)
DD REEL MOTOR UNIT
CONNECTOR

Figure M18-A

3. The Reel Motor Unit can be re-installed by reversing the removal procedure.

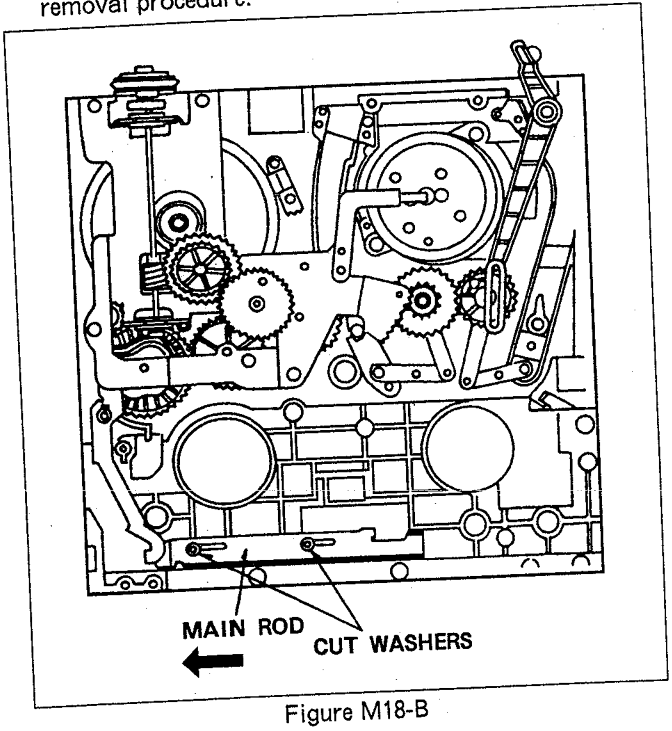

MAIN ROD
CUT WASHERS

Figure M18-B

Note: When assembling the DD Reel Motor Unit, side the Main Rod to far left side by rotating a center Gear.

3-5-10. REPLACEMENT OF THE MAIN BRAKE (S),(T) UNIT

1. Remove the Reel Unit (Refer to Replacement of the Reel Unit).
2. Remove a Retaining Ring (A).
3. Remove the Main Brake (S),(T) with a spring.

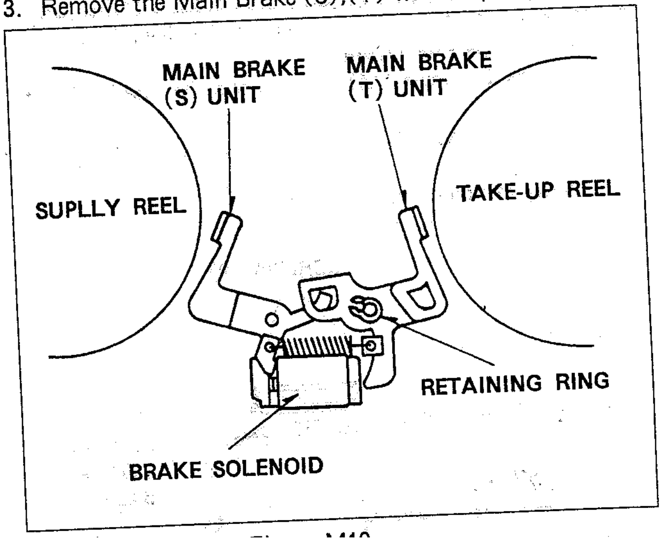

MAIN BRAKE (S) UNIT
MAIN BRAKE (T) UNIT
SUPLLY REEL
TAKE-UP REEL
RETAINING RING
BRAKE SOLENOID

Figure M19

4. The new Main Brake (S),(T) Unit can be reinstalled by reversing the removal procedure.

Note: When assembling the DD Reel Motor Unit, slide the Main Rod to far left side by rotating a Center Gear (Figure M19).

3-5-11. REPLACEMENT OF THE PRESSURE ROLLER UNIT

1. Place the deck in or EJECT mode.
2. Remove the Pinch Can Cap.
3. Remove the Pressure Roller Unit.

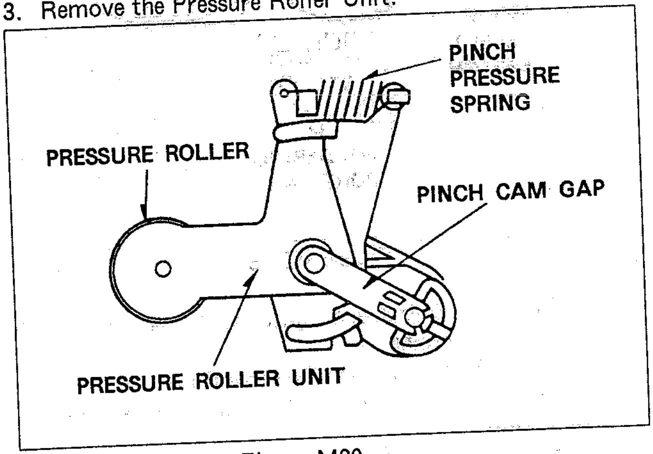

PINCH PRESSURE SPRING
PRESSURE ROLLER
PINCH CAM GAP
PRESSURE ROLLER UNIT

Figure M20

4. The new Pressure Roller Unit can be re-installed by reversing the removal procedure.

3-5-12. REPLACEMENT OF THE MODE SWITCH

1. Place the deck in the STOP mode.
2. Remove the Cassette Compartment Unit. (Refer to Disassembly Procedures).
3. Remove the Pinch Cam Cap and Pressure Roller Unit.
4. Unscrew the 2 screws and remove the Head Amp.
5. Remove the Pinch Cam.
6. Unscrew 2 screws (M) and remove the Loading Motor Base.
7. Unscrew a screw (N) and unsolder 5 of soldered portions.
8. Finally remove the Mode Switch.

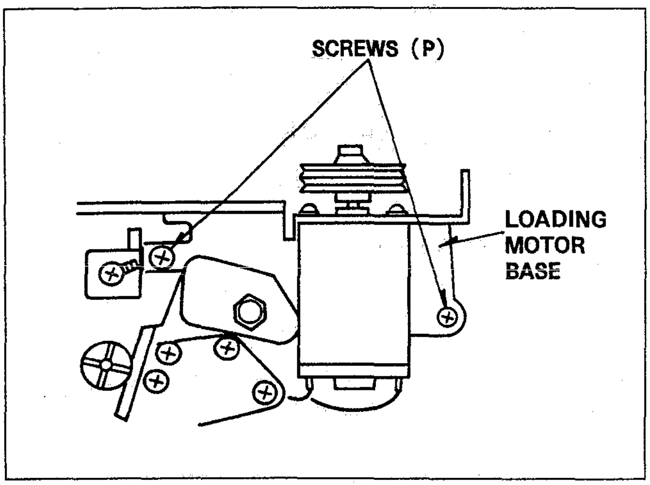

SCREWS (P)
LOADING MOTOR BASE

Figure M21-A

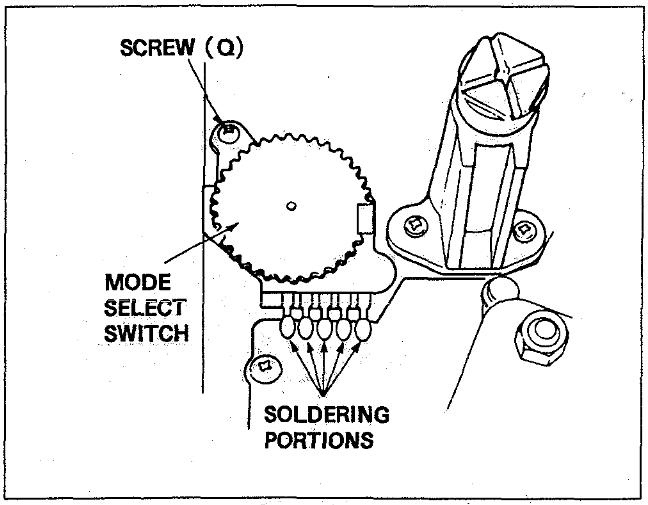

SCREW (Q)
MODE SELECT SWITCH
SOLDERING PORTIONS

Figure M21-B

9. Install a Mode Switch and tighten screw (N), then solder 5 soldering portions.
10. Install the Pinch Cam and Pressure Roller Unit. (Refer to "Assembly Procedures of Pinch Cam & Pressure Roller Unit.")
11. Install the Loading Motor Base and tighten screw (M).
12. Install the Head Amp and tighten 2 screws.
13. Install the Cassette Compartment. (Refer to Reinstallation of Cassette Compartment.)

6-5-14. REPLACEMENT OF THE HEAD CLEANING PAD

1. Remove a Cut Washer (N) and the Head Cleaning Pad Unit.
2. The Head Cleaning Pad Unit can be reinstalled by reversing the removal procedure.

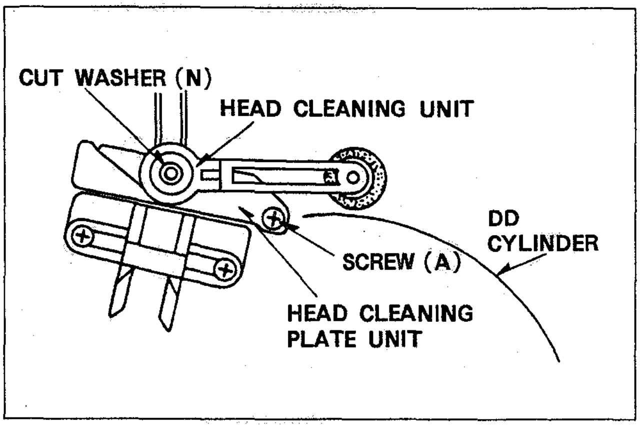

CUT WASHER (N)
HEAD CLEANING UNIT
DD CYLINDER
SCREW (A)
HEAD CLEANING PLATE UNIT

Figure M22

3-6. MECHANICAL ADJUSTMENT PROCEDURES

3-6-1. FLOW CHART OF TAPE INTERCHANGEABILITY ADJUSTMENT

AFTER RE-INSTALLING THE UPPER OR LOWER CYLINDER

↓

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT

↓

3-6-6. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION

↓

3-6-7. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION

AFTER RE-INSTALLING THE A/C HEAD

↓

3-6-5. ADJUSTMENT OF THE A/C HEAD
- A. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT
- B. COARSE ADJUSTMENT OF THE A/C HEAD TILT
- C. ADJUSTMENT OF THE A/C HEAD AZIMUTH
- D. ADJUSTMENT OF THE A/C HEAD TILT AND AZIMUTH
- E. FINE ADJUSTMENT OF THE A/C HEAD HEIGHT

↓

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT

↓

3-6-6. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION

↓

3-6-7. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION

AFTER RE-INSTALLING THE INCLINED BASE (S)

↓

3-6-2. COARSE ADJUSTMENT OF THE P2, P3 POST HEIGHTS

↓

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT

AFTER RE-INSTALLING THE INCLINED BASE (T)

↓

3-6-2. COARSE ADJUSTMENT OF THE P2, P3 POST HEIGHTS

↓

3-6-8. ADJUSTMENT OF THE INCLINED BASE (T)

↓

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT

AFTER RE-INSTALLING THE PULL-OUT (P5) POST

↓

3-6-4. ADJUSTMENT OF THE PULL-OUT POST (P5) HEIGHT

AFTER RE-INSTALLING THE P2, P3 POST

↓

3-6-2. COARSE ADJUSTMENT OF THE P2, P3 POST HEIGHTS

↓

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT

3-6-2. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS (P2 and P3)

Note: The Tape Guide Posts have been precisely adjusted at the factory. Therefore, normally do not change the height of the P2 and P3 Posts.
To prevent the alignment tape from being damaged, use a normal cassette tape for this procedure.

<< TOOL >>

Post Adjustment Plate	VFK1012
Reel Table Height Gauge	VFK0190
Post Adjustment Screwdriver	VFK0329
Check Light	VFK0948
L Type Screwdriver	VFK0269

1. Remove the cassette compartment (Refer to Disassembly Procedures).
2. Place the Post Adjustment Plate over the reel tables. Confirm that the Post Adjustment Plate is firmly seated as shown in Figure M25-A.

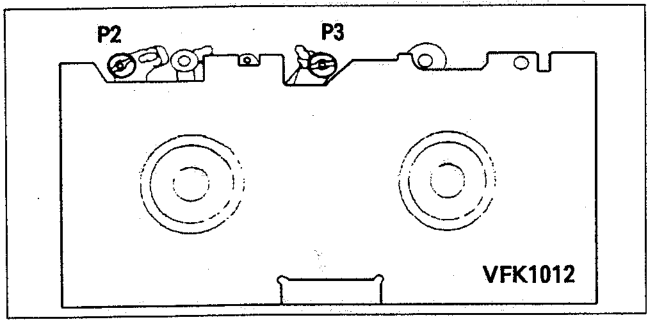


Figure M25-A

3. Lower 2 tape guide posts (P2 and P3) by turning the Post Adjustment screwdriver so that the condition of post becomes as shown in Figure M25-B. That is the lower edge of Tape guide should be lower than surface of AdjustmentPlate.

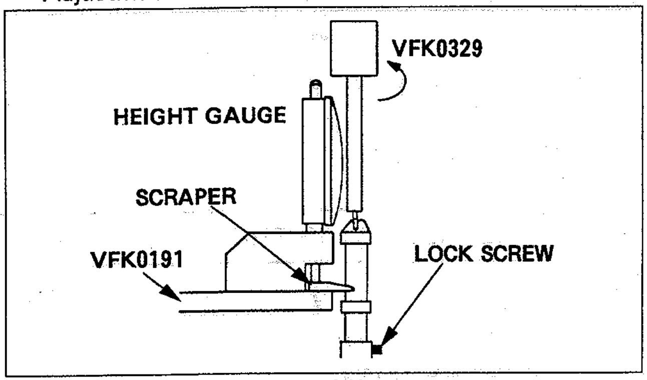


Figure M25-B

Note: Before turning P2 and P3 slightly loosen the Lock Screw using the L Type Screwdriver.

4. Place the scraper of Reel Table height Gauge as shown in Figure M25-C.
Set the gauge to zero, then raise the post slowly until the lower tape guide just touches the bottom of the scraper. Use the gauge to determine the exact point at which the lower tape guide touches the scraper.

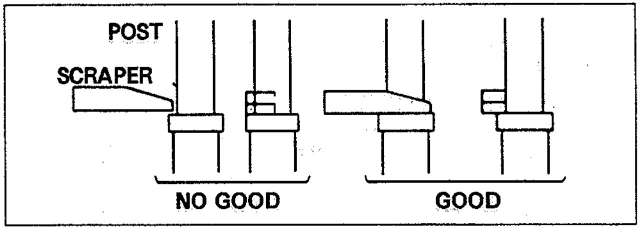


Figure M25-C

5. After the adjustment, install the cassette compartment referring to Reinstallation of cassette compartment.
6. Play back the beginning portion of NV-T160 cassette tape, and confirm that tape travel as shown in Figure M25-D.

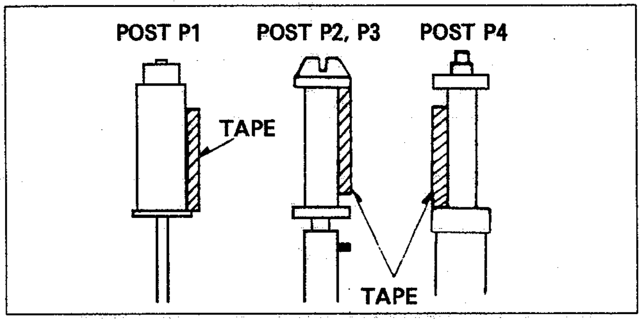


Figure M25-D

7. Make sure that the edges of the tape are not curling or waving at the bottom or top end of the posts P2, P3 by using the Check Light.
8. If there are waving or filling at the lower or upper edge of the P2 and P3 posts, readjust the heights of P2 and P3 Posts correctly as shown in Figure M25-E.

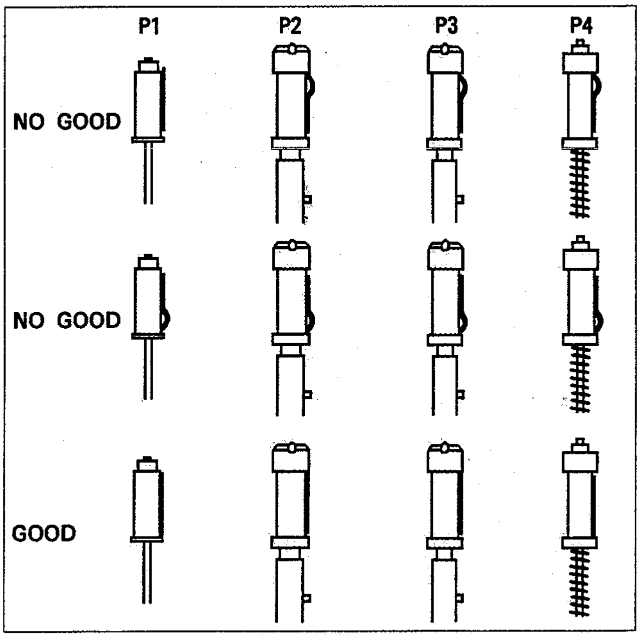


Figure M25-E

9. And confirm that the tape runs along the Cylinder Lead Correctly.

3-6-3. FINE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT (P2 and P3)(LINEARITY)

<< TOOL >>

Alignment Tape VFM8080HQFP
Post Adjustment Screwdriver ····················VFK0329

Note: Before playing back the alignment tape playback a normal cassette tape and confirm correct transport.

1. Connect the oscilloscope to the TP2 of the Video I/O C.B.A. (Video RF Envelope and the head switching pulse as a triggering signal.
2. Play back the 3-nd portion (Color Bar) of the alignment tape (VFM8080HQFP).
3. Adjust the tracking control on the front panel so that the RF envelope becomes maximum.
4. If the RF envelope appears like example A or B in Figure M26-B then adjustment of the tape guide post (P2 ; Entrance) is necessary.

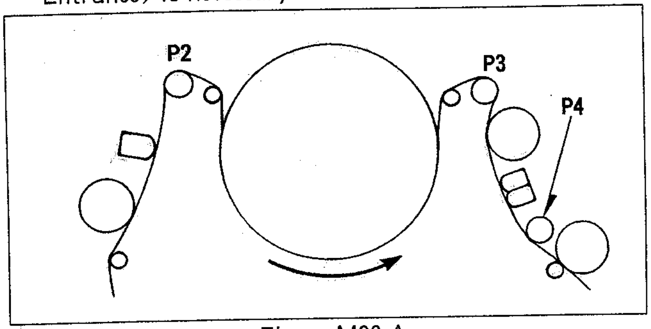


Figure M26-A

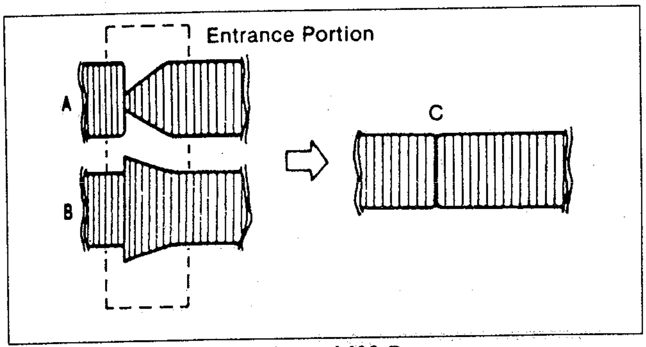


Figure M26-B

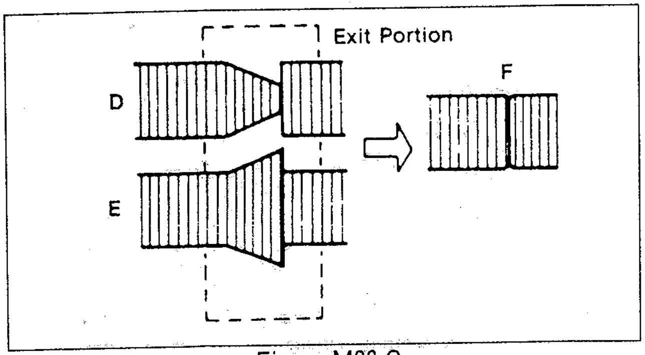


Figure M26-C

5. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Figure M26-B.
6. If the RF envelope appears like example D or E in Figure M26-C, then adjustment of the tape guide post (P3 ; Exit) is necessary.
7. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in Figure M26-C.
8. The output envelope should vary nearly parallel with other condition as shown in Figure M26-D.

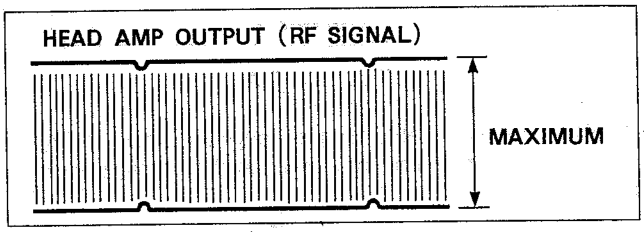


Figure M26-D

9. If the RF envelope does not meet these specification,
   $V1/V0 \geqq 0.7$
   $V2/V0 \geqq 0.8$
   $V3/V0 \geqq 0.7$
   then repeat steps 4-9 again.

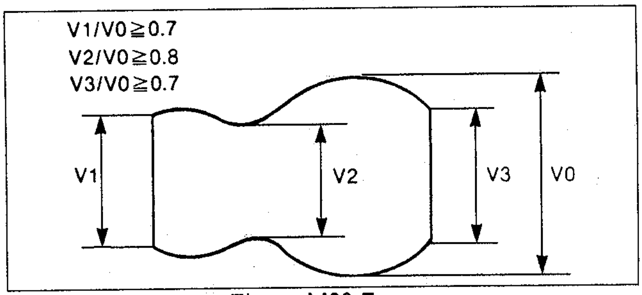


Figure M26-F

6-6-4. ADJUSTMENT OF THE PULL-OUTPOST (P5) HEIGHT

<< TOOL >>

Post AdjustmentPlatee ····························VFK1012
Reel Table Height Gauge ·························VFK0190
Nut Driver ······Purchase locally

<< SPEC >>

0.03mm 0.01mm

Note: Unless the replacement or adjustment this post is required, the adjustment nut should not be turned.

1. Remove the cassette compartment (Refer to Disassembly procedures).
2. Place the Post Adjustment Plate over the reel tables as shown in Figure M27-A.
3. Turn the Worm Shaft counterclockwise (loading direction) until the mechanical condition becomes as shown in Figure M27-A.
4. Placethe Reel Table Height Gauge on the Post Adjustment Plate and set the gauge to zero 0 as shown in Figure M27-B.

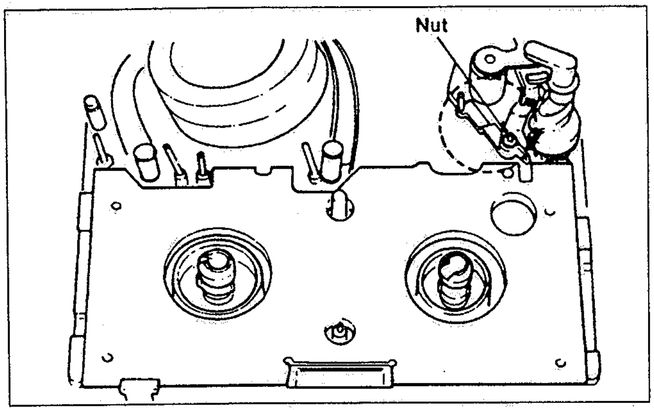


Figure M27-A

5. Place the Reel Table Height Gauge as shown in Figure M27-C and turn the nut slowly until the gauge reads.

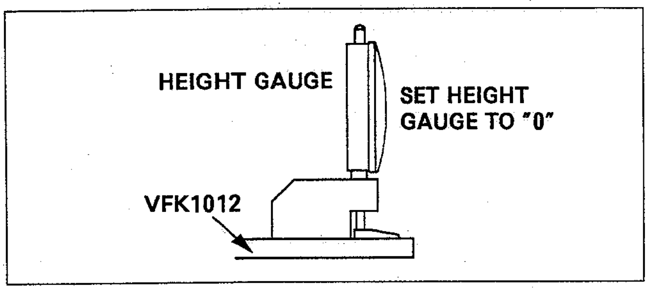

HEIGHT GAUGE
SET HEIGHT GAUGE TO "0"
VFK1012

Figure M27-B

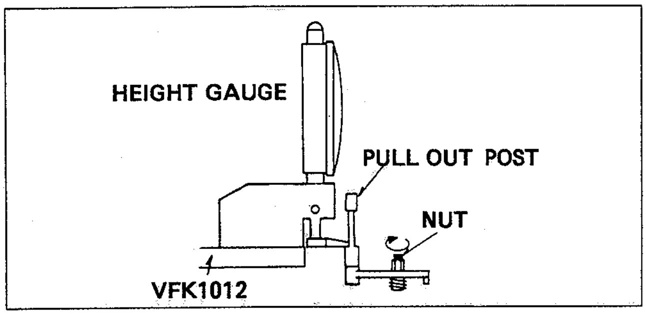

HEIGHT GAUGE
PULL OUT POST
NUT
VFK1012

Figure M27-C

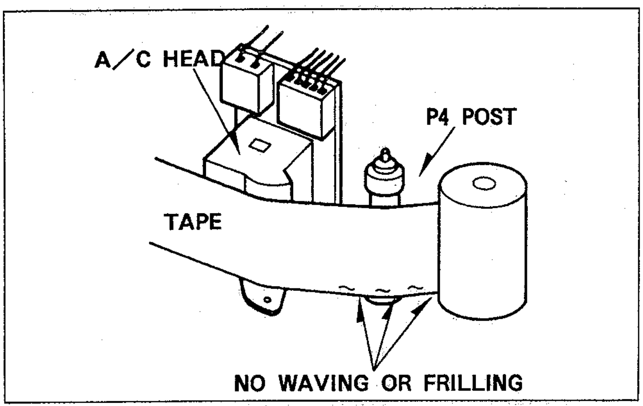

A/C HEAD
P4 POST
TAPE
NO WAVING OR FRILLING

Figure M27-D

6. After the adjustment, install the cassette compartment (Refer to reinstallation of Cassette Compartment).
7. Play back a normal cassette tape on Review search mode, and make sure that the edges of the tape are not curling or waving at the bottom end of the P4 post by using the Check Light as shown in Figure M27-E.

Note: There is easy method to check Waving of Filling. If there is Waving or Filling in the lower edge, the white green pattern which is reflected on the tape will curve or not linear as shown in Figure M27-E.

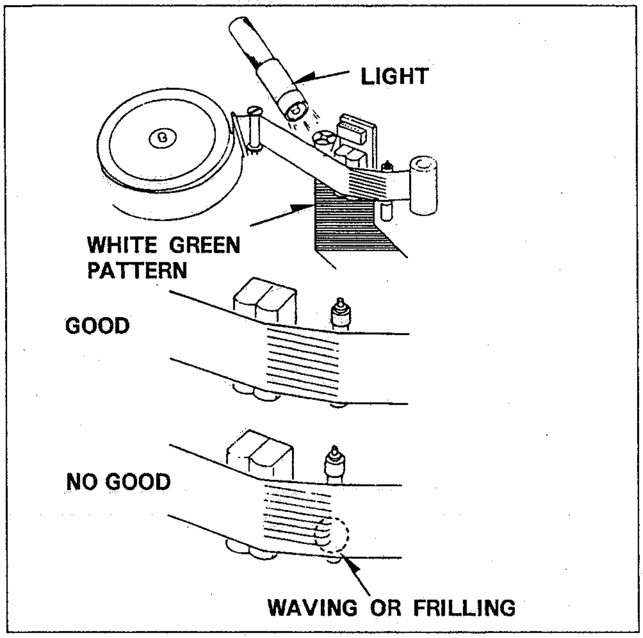

LIGHT
WHITE GREEN PATTERN
GOOD
NO GOOD
WAVING OR FRILLING

Figure M-27-E

3-6-5. ADJUSTMENT OF THE A/C HEAD

A. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT

Note: This procedure should be performed only when the A/C Head is replaced.

<< TOOL >>

Check Light ··VFK0948
Nut Driver ······Purchase locally
VHS video Tape

1. With the tape running, look at the lower edge of the control head by using the check light.
2. Adjust the Nut (A) as shown in Figure M28-A by turning the Nut (A) clockwise to lower the head, and counterclockwise to raise it.

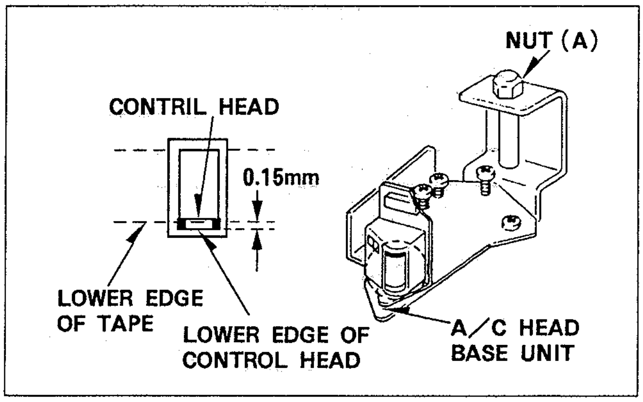

NUT (A)
CONTRIL HEAD
0.15mm
LOWER EDGE OF TAPE
LOWER EDGE OF CONTROL HEAD
A/C HEAD BASE UNIT

Figure M28-A

B. COARSE ADJUSTMENT OF THE A/C HEAD TILT

Note: This procedure should performed only when the A/C Head is replaced or posts heights are readjusted.

<< TOOL >>
Alignment Tape VFM8080HQFP
Check Light ··VFK0948
Screwdriver (+) Purchase locally
VHS Vide Tape

1. Play back a VHS video tape which the amount of tape winding of a Take up Reel, Turn a screw (C) to clockwise until waving or Filling appears in the Lower edge of P4 post as Figure M28-B.

Note: There is easy method to check waving or Filling if there is waving or Filling in the lower edge. ZEBRA pattern which is reflected on the tape will curve or not linear (Figure M27-D).

2. Turn the screw (C) to counter-clockwise until waving or filling do not appear in the in the lower edge of P4 post.

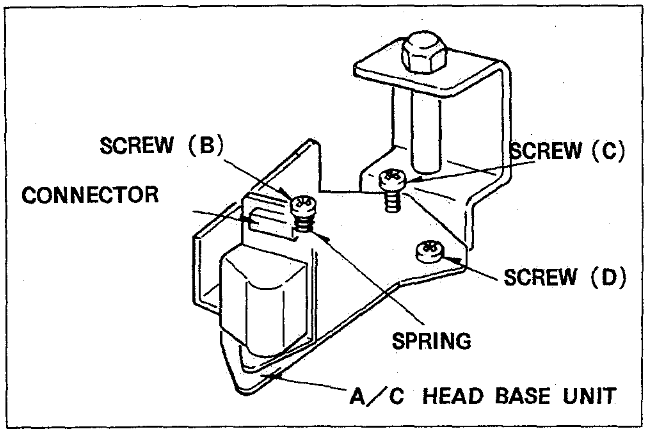


Figure M28-B

C. ADJUSTMENT OF A/C HEAD AZIMUTH

1. Connect the scope CH1 to Normal Audio out put on the Rear Jack.
2. Play back the 2-nd portion (Normal Audio 10KHz) of the alignment tape (VFM8080HQFP).
3. Adjust the screw (D) so that output level become maximum M28-C.

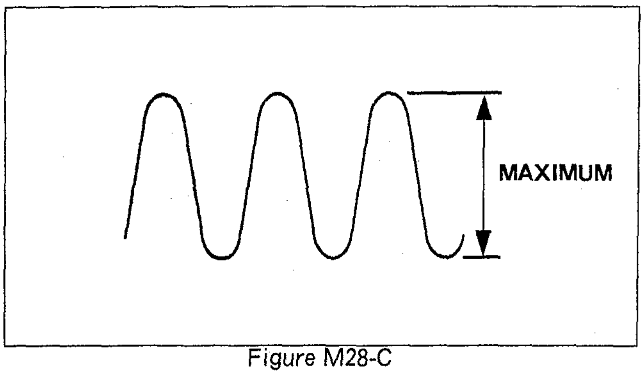


Figure M28-C

D. TILT and AZIMUTH ADJUSTMENT OF A/C HEAD

1. Adjust the screw (D) and (C) so that Nomal audio output levels become maximum as shown in Figures M28-C.
2. Comfirm that the tape runs arund lower limiter of P4 post by using the check light as shown in FiguresM-28D.

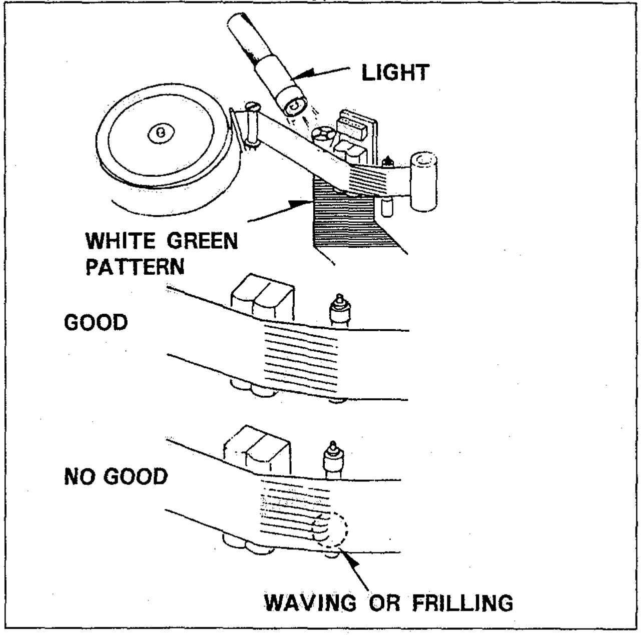


Figure M28-D

E. FINE ADJUSTMENT OF A/C HEAD HEIGHT

Note: Before this adjustment Coarse Adjustment of the A/C Head Height should be performed.

<< TOOL >>
Alignment Tape VFM8080HQFP
Nut Driver ······Purchase locally

1. Connect a scope CH1 to the Audio output on the Rear Jack C.B.A.
2. Play back the 2-nd portion (Normal Audio 10kHz) of the Alignment Tape (VFM8080HQFP).
3. Adjust the Nut (A)(Figure M28-A) so that the CH2 output level becomes maximum as shown in Figure M28-G.

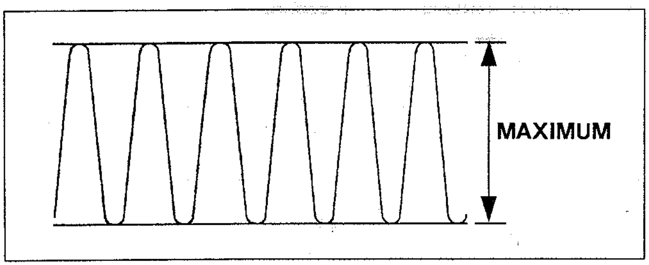


Figure M28-E

3-6-6. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)

Note: This procedure should be performed only when the A/C head is replaced, and after performing the tape interchangeability adjustment.

<< TOOL >>
H-Position Adjustment Screwdriver ············VFK0328
Alignment Tape VFM8080HQFP

1. Connect a scope CH1 to TP4 of the Video (1) C.B.A. and a scope CH2 to the Audio output on the Rear Jack.
2. Play back the 4-the position (Monoscope 3 and Audio/Every 10-the field is skipped) of the Alignment tape VFM8080HQFP.
3. Adjust the A/C head horizontal position screw so that the phase of audio drop out and video RF envelope drop-out becomes the same as shown in Figure M29.

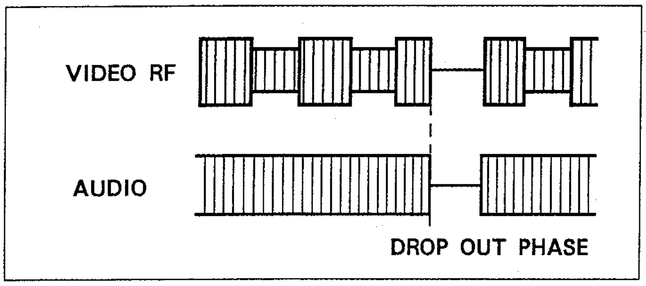


Figure M29

Note: After completion the fine adjustment of the A/C head horizontal position, the phase of Audio drop-out and Video RF envelope drop- out may be changed slightly.

3-6-7. FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE)

Note: This procedure should be performed only when the A/C head is replaced, and after performing the tape interchangeability adjustment.

<< TOOL >>
H-Position Adjustment Screwdriver ············VFK0328
Alignment Tape VFM8080HQFP

1. Connect a oscilloscope to TP4 of Video (1) C.B.A.
2. Connect a Jumper wire between TP6002 and TP6003 on the System Control C.B.A.
3. Play back the 3-nd portion (Color Bar) of the alignment tape (VFM8080HQFP).
4. Press both of the Tracking Control buttonss ("+" and "−") together on the Front Panel.
5. Adjust the Horizontal Position Screw (Figure M29) of A/C head so that the RF signal becomes maximum level as shown in Figure M30.

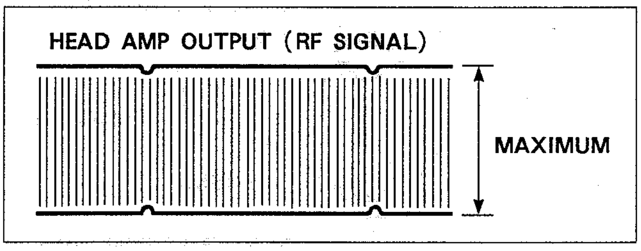


Figure M30

3-6-8. ADJUSTMENT OF INCLINED BASE (T)

<< TOOL >>
Check Light ··VFM0948
Screwdriver (+) Purchase locally
VHS Video Tape

1. Play back the beginning portion of 120 minute normal cassette tape and confirm that waving or filling of P3 post is as shown in Figure M31-A.

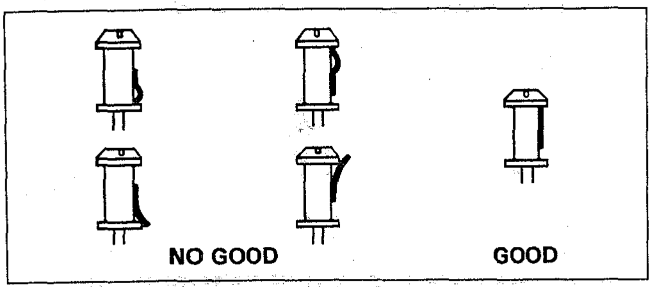


Figure M31-A

2. If there are waving at the lower and upper edge of the P3 post, Adjustment the inclined base of P3 post as shown in Figure M31-B.

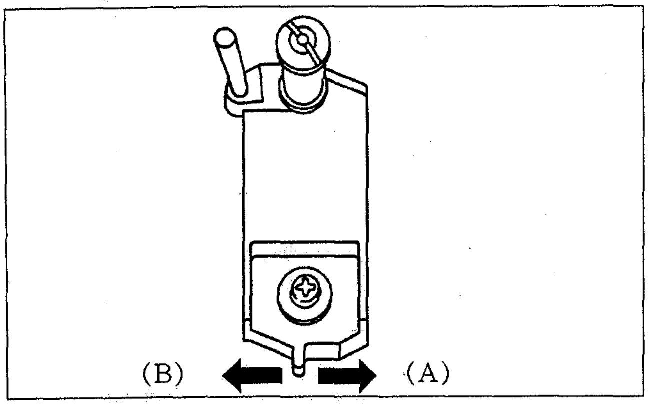


Figure M31-B

[When the inclined base is adjust to an arrow direction (B) tape becomes to lower edge.]

3. Confirm that tape position P3 post is upper edge and then tighten screw as shown in Figure M31-B.
4. Confirm that waving is occurred between upper side of P3 post and A/C head. If there is waving adjust step 2.

Note: After adjust inclined base tapeinterchangea-bility and A/C head adjustment must be required.

3-6-9. ADJUSTMENT OF THRUST GAP

1. Turn the thrust adjustment screw clockwise to until the capstan rotor just separate from the capstan stator whit rotating the capstan rotor by hand.
2. Turn the thrust adjustment screw clockwise to 180 degrees from paint at step 1.
3. Set the 2 oil seal to edge of the capstan housing as shown in Figure M32.

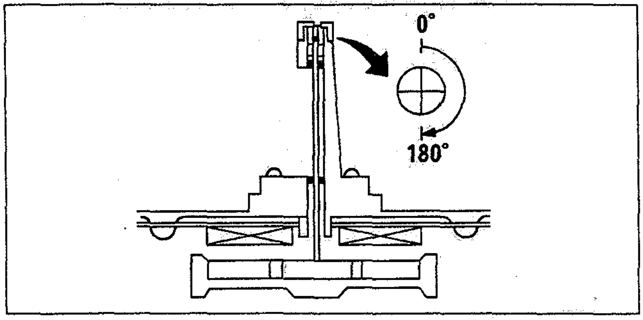


Figure M32

3-6-10. ADJUSTMENT OF FG GAP

<< TOOL >>
Fine Adj. screwdriver·······························VFK0330
Screwdriver ······Porchase loclly
<< SPEC >>
0.13mm 0.02mm

1. Loosen screw (Q) and set the Fine Adjustment screw driver n the hole on the Capstan Stator Unit.
2. Adjust the gap between FG head and the Capstan Stator unit.
3. After adjustment tighten a screw (Q).

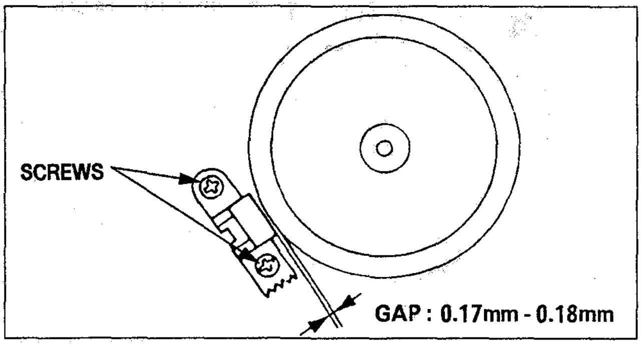


Figure M33-A

Note: After adjust FG head gap, FG output level confirmation must be required.
Do not touch the surface of rotor and keep any magnetizable material away.

CONFIRMATION OF FG OUTPUT LEVEL

1. Connect a oscilloscope to CAP FG output(P2302 3,5pin) on the Servo drive C.B.A.
2. Confirm that FG output level is within specification during PLAY/REC or PLAY mode.
3. If FG output level is out of specification Readjust the step 1 to 3 of FG GAP Adjustment.

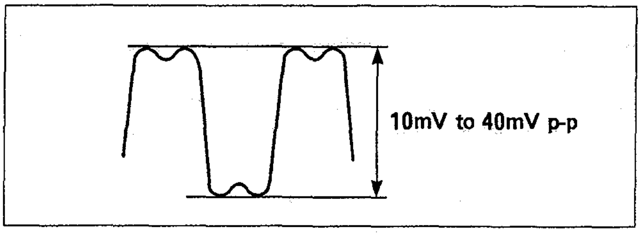


Figure M33-B

3-6-11. MEASUREMENT AND ADJUSTMENT OF BACK TENSION

<< TOOL >>

Back Tension Meter ································VFK0132
VHS Cassette Tape (120min. tape except S-VHS tape)

A. FWD TENSION ADJUSTMENT

<< SPEC >>

23g ~ 27g

1. Play back the cassette tape from the beginning and wait until the tape movement get the stabilization (for approx. 10 to 20 seconds).
2. Pull the Impedance Roller in the direction indicated the arrow in Figure M34-A secure it with a piece of adhesive tape.
3. Insert the Back Tension Meter into the path of a tape, and measure the back tension.
4. If it is out of specification, replace the Tension spring.

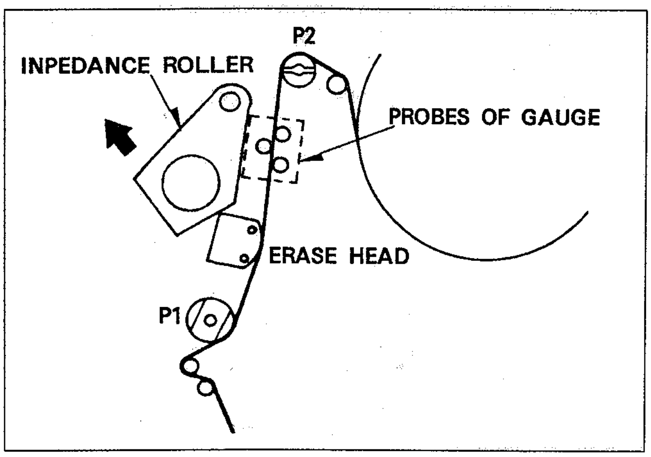


Figure M34-A

B. REV TENSION ADJUSTMENT

<< SPEC >>

30g ~ 60g

1. Play back the cassette tape on SP Reverse Play mode from the beginning and wait until the tape movement get the stabilization (for approx. 10 to 20 seconds).
2. Pull the Impedance Roller in the direction indicated by the arrow in Figure M34-A secure it with a piece of adhesive tape.
3. Insert the Back Tension Meter into the path of a tape, and measure the back tension.
4. If it is out of specification, replace the Tension spring.

Note: While measuring, make sure that the three probes of the meter are all in good contact with the tape.
As the tension meter is very sensitive, we recommend taking 3 separate readings.

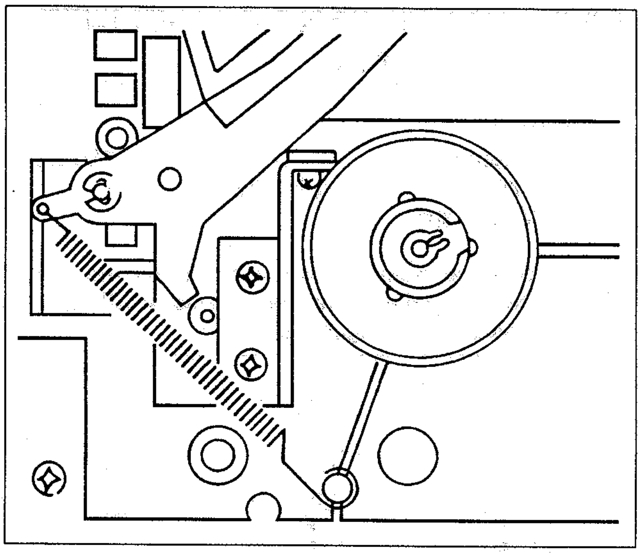


Figure M34-B

3-6-12. HEIGHT ADJUSTMENT OF THE REEL TABLES

<< TOOL >>

Post Adjustment Plate ·····························VFK1012
Reel Table Height Gauge ··························VFK0190

<< SPEC >>

0 ~ 0.15mm

1. Remove the cassette compartment.
2. Place the post Adjustment Plate on the reel tables.
3. Place the Reel Table Height Gauge on the plate so that the scraper of the gauge touches the cut- out portion of the plate, then set the gauge to zero 0 as shown in Figure M35-A.

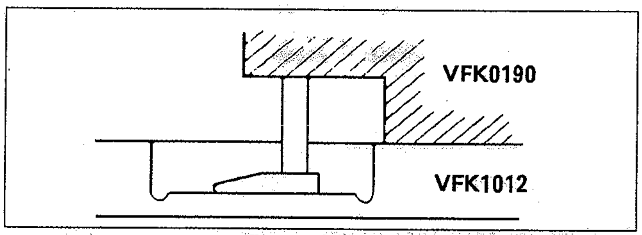


Figure M35-A

4. Measure the height of the top surface of either Reel table and note the difference in height from the plate cut-out (Figure M35-A and M35-B). Repeat this procedures for the other Reel Table.

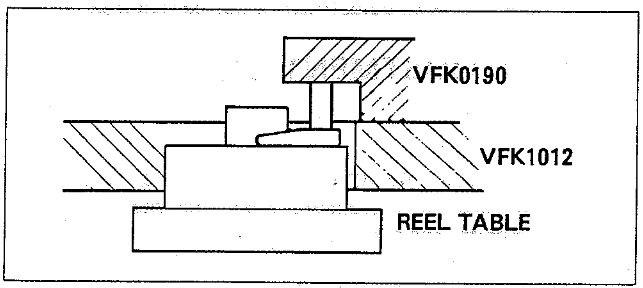


Figure M35-B

5. If the difference of Supply Reel table is more than 0.15mm higher or lower, replace the Supply Reel table. When the difference of Take Up Reel table is more than 0.15mm higher or lower, adjust nut (A)(Figure M35-C) so that measurement becomes the spec. If you can not adjust to the spec., replace Take Up Reel table.

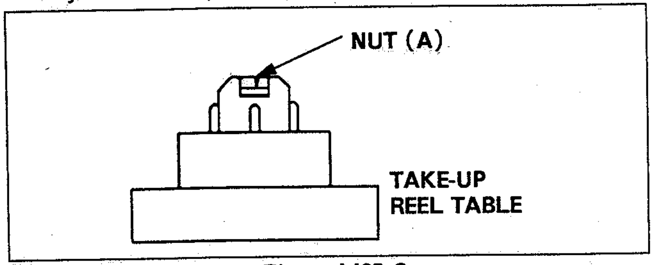


Figure M35-C

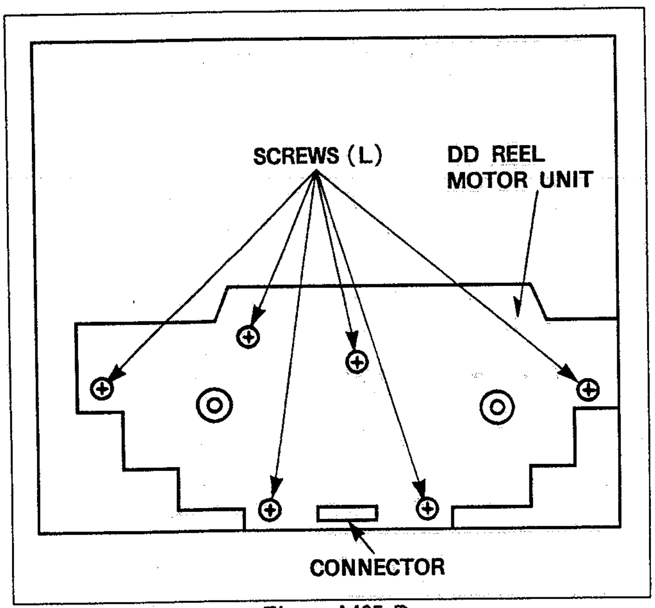


Figure M35-D

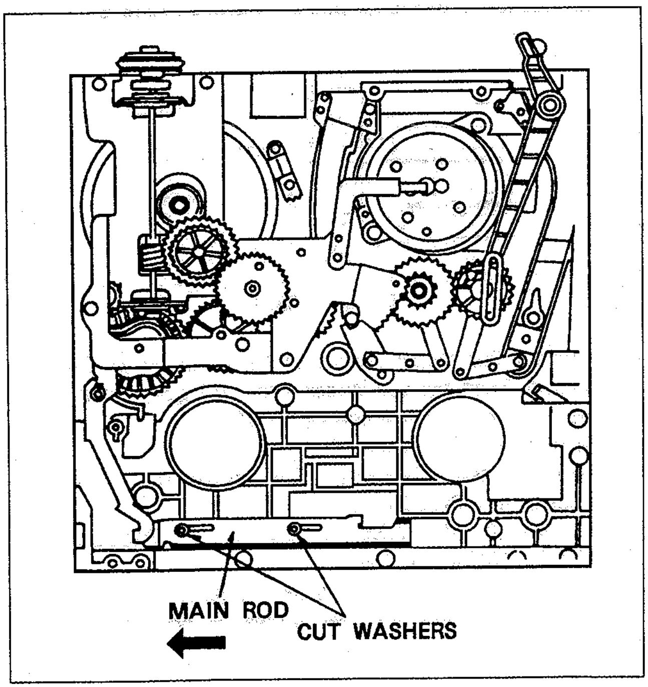


Figure M35-E

Note: When replacing the tables, the DD Reel Unit needs to be removed from the chassis. Remove 6 screws and carefully lift it out as shown in Figure M35-D. When assembling the DD Reel Unit, slide a Main Rod to far left side by rotating the Center Gear, and then screw the 6 screws.

3-6-13. MEASUREMENTAND ADJUSTMENT OF THE BRAKE TORQUE

<< TOOL >>

Torque Gauge	VFK0133
Adaptor for Gauge	VFK0134

1. Remove the top cover and the cassette compartment.
2. Attach the adapter to the torque gauge and place the deck in STOP mode (Sub loading mode).
3. Place the torque gauge on the reel table as shown in Figure M36-A. The weight of the gauge should not rest on the reel table.
4. Turn the torque gauge in the direction indicated in Figure M36-B until the brake begins slipping and read the gauge.

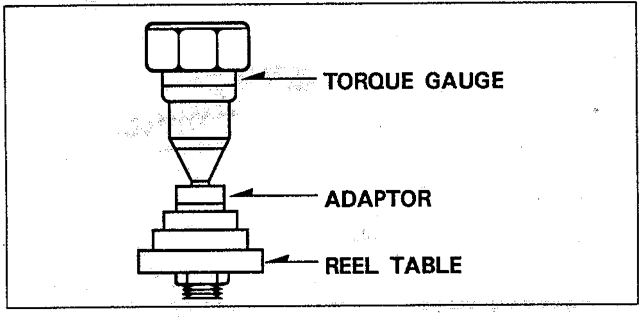
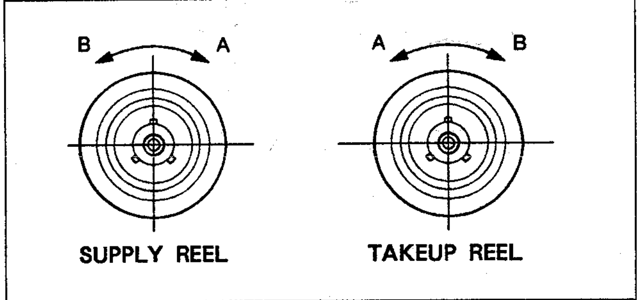


Figure M36-A



	A	B
Take up	more than 550 g-cm	more than 50 g-cm
Supply		more than 50 g-cm

Figure M36-B

5. If it is out of specification, replace the Brake Spring.

Note: If the proper brake torque cannot be obtained by replacing the Brake Spring, clean thbraking surface of the reel table with a soft cloth and re-measure the brake torque. If its still out of specification, replace the Main Brake (S) or (T) Unit.

3-6-14. PRESSING FORCE CONFIRMATION OF PRESSURE ROLLER UNIT

<< TOOL >>

Fan Type Tension Gauge ···························VFK66
VHS 120min, Cassette Tape

<< SPEC >>

1050g ± 230g

1. Remove the Cassette Compartment.
2. Play back the end portion of VHS (120min.) tape.
3. Set the Fan Type Tension Gauge to the part (A) of Pinch Roller Unit.
4. Press the Arm with the Gauge, in the direction indicated by the arrow as show in Figure M37.
5. Conform the reading of the Tension Gauge is 1050g ± 230g at the moment of the tape running stop.
6. If it is out of specification, replace the Pressuer Roller.

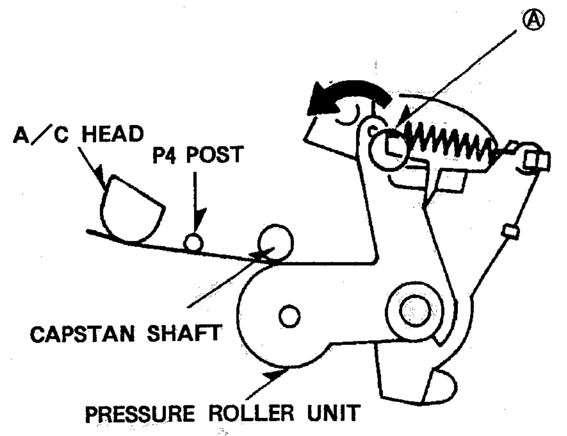

Ⓐ
A/C HEAD
P4 POST
CAPSTAN SHAFT
PRESSURE ROLLER UNIT

Figure M37

3-6-15. ADJUSTMENT OF REV TENSION SENSOR POSITION

<< TOOL >>

Tension Sensor Adj. Fixture·······················VFK0806
Tension Post Adj. Plate ···························VFK0236
Fine Adj. Screwdriver ·····························VFK0330
Digital Volt Meter Purchase locally

<< SPEC >>

2.3V ~ 2.7V

Note: Assemble a Tension Sensor Adjustment Fixture (VFK0806) and a Tension Post Adj. Plate (VFK0236) as shown in Figure M38-A.

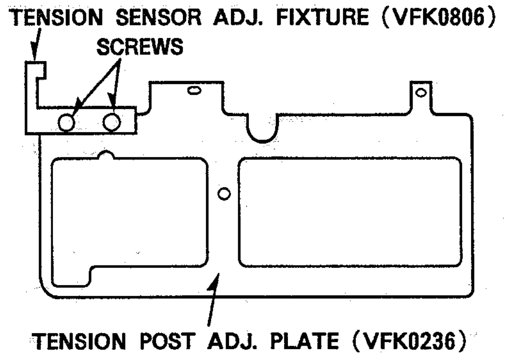

TENSION SENSOR ADJ. FIXTURE (VFK0806)
SCREWS
TENSION POST ADJ. PLATE (VFK0236)

Figure M38-A

1. Remove the Top Plate and Cassette Holder Unit. (refer to Disassemble Procedures)
2. Disconnect the 4pin and 2pin flat wire to the pin 3 and 4 of the connector P1508.
3. Connect two wires of 4pin flat wire to the pin 3 and 4 of the connector P1508 as shown in Figure M38-B.

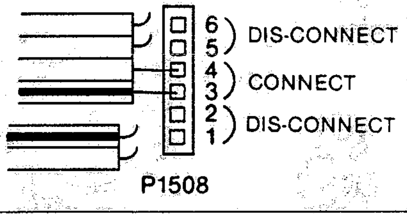

6
5
DIS-CONNECT
4
3
CONNECT
2
1
DIS-CONNECT
P1508

Figure M38-B

4. Push the Sub Wiper Arm (R) to direction of Cassette loading. Then the Sub Wiper Arm (R) goes down it self and mode of machine change to STOP.
5. Turn the Power switch off.
6. Remove the Cassette Compartment (refer to Disassembly Procedures).
7. Connect the V.T.V.M. of D.V.M. to TP2502 on the SERVO/SYSCON C.B.A.
8. Place the Tension Post Position Adjustment Plate with the Fixture over the reel tables as shown in Figure M38-C.

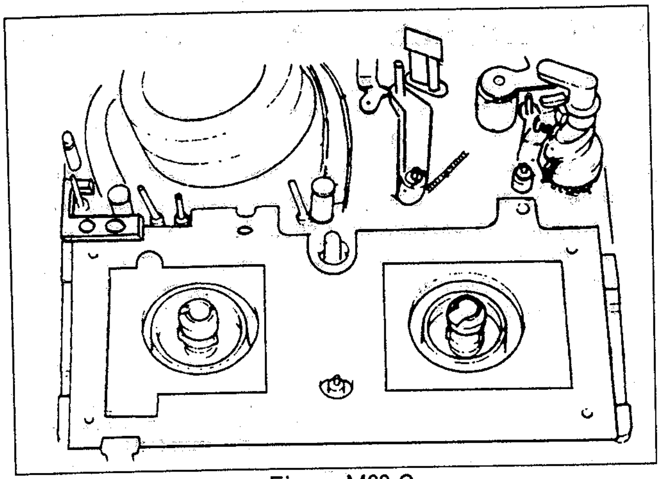


Figure M38-C

9. Turn the Power switch on.
10. Slightly loosen 2 screws (C). Insert a Fine Adj. Screwdriver in the hole (D)(Figure M38-D).

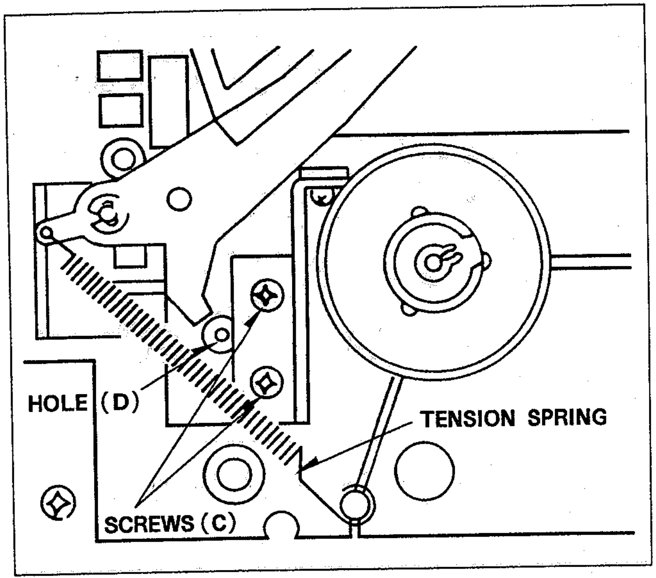


Figure M38-D

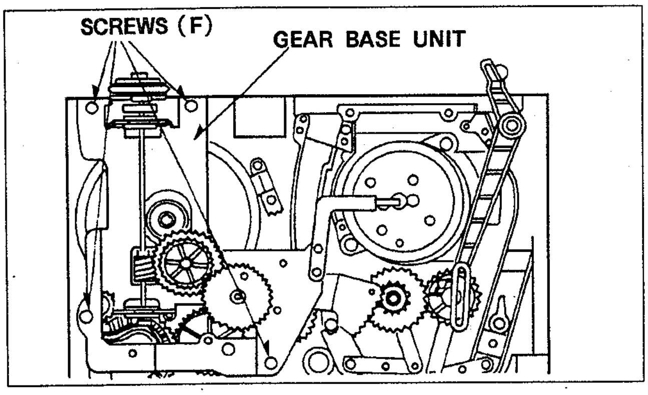
11. Press the PLAY button.
12. Adjust the Rev Sensor Position so that measurement becomes D.C. 2.3V~2.7V.
13. Tighten the 2 Screws (C).
14. Remove the Tension Sensor Fixture.
15. Reinstall the Cassette Compartment.
16. Confirm Playback picture (Rev Playback mode, Playback mode etc.)

3-7. ASSEMBLY AND ADJUSTMENT PROCEDURES OF MECHANISM

The mechanism of this model is mostly engaged to the System Control Circuit, through the mode select switch. Therefore the relation between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on. If these parts are not fixed properly, the unit will be unloaded or compulsorily stopped. And it will result being damaged at any mechanical or electrical parts. The overall mechanical condition (alignment) of bottom and top view are shown in Figure M39-A and Figure M39-B. This mechanical adjustment is performed in the STOP mode.

3-7-1. CONFIRMATION OF ALIGNMENT CONDITION

1. Remove the Loading Belt.
2. Unscrew 4 screws (F) and remove the Gear Base Unit. (Figure M39-A)
3. Turn the Center Gear to counter-clockwise until 2 big holes of Center Gear align with 2 big holes of Retainer Gear and Ring Gear and Chassis as shown in Figure M39-C.


SCREWS (F)
GEAR BASE UNIT

Fiugre M39-A

4. Identification hole on the Mode Select Switch at 6 oclock position and aligned with small hole on Pinch Cam as shown in Figure M39-B.
5. P5 Arm is completely loading position and the Inclined Base (S) and (T) are completely unloading position.
6. Small hole on Sub Cam Gear should align with small hole on the Connection Gear and rectangular mark on the Connection Gear should be at a 3 oclock position.
7. Pressure Roller Unit is UP position.

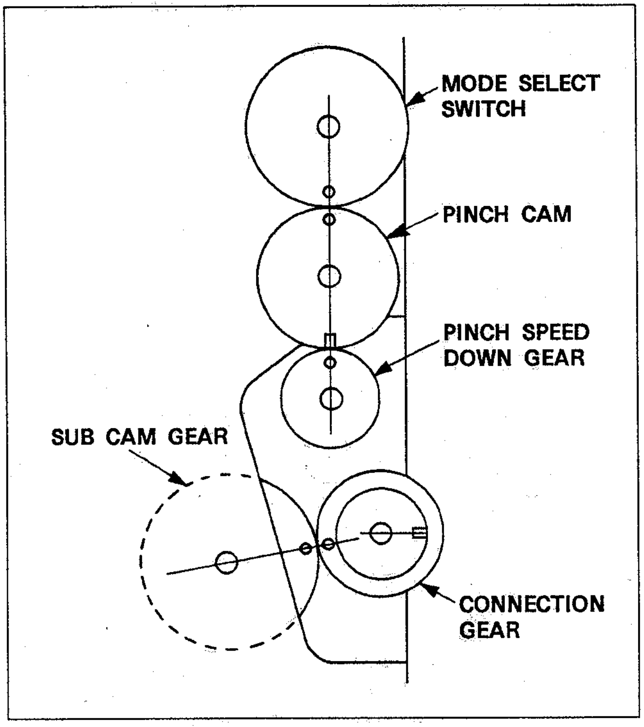

MODE SELECT SWITCH
PINCH CAM
PINCH SPEED DOWN GEAR
SUB CAM GEAR
CONNECTION GEAR

Figure M39-B Top View of Overall IQ-Mechanical Condition

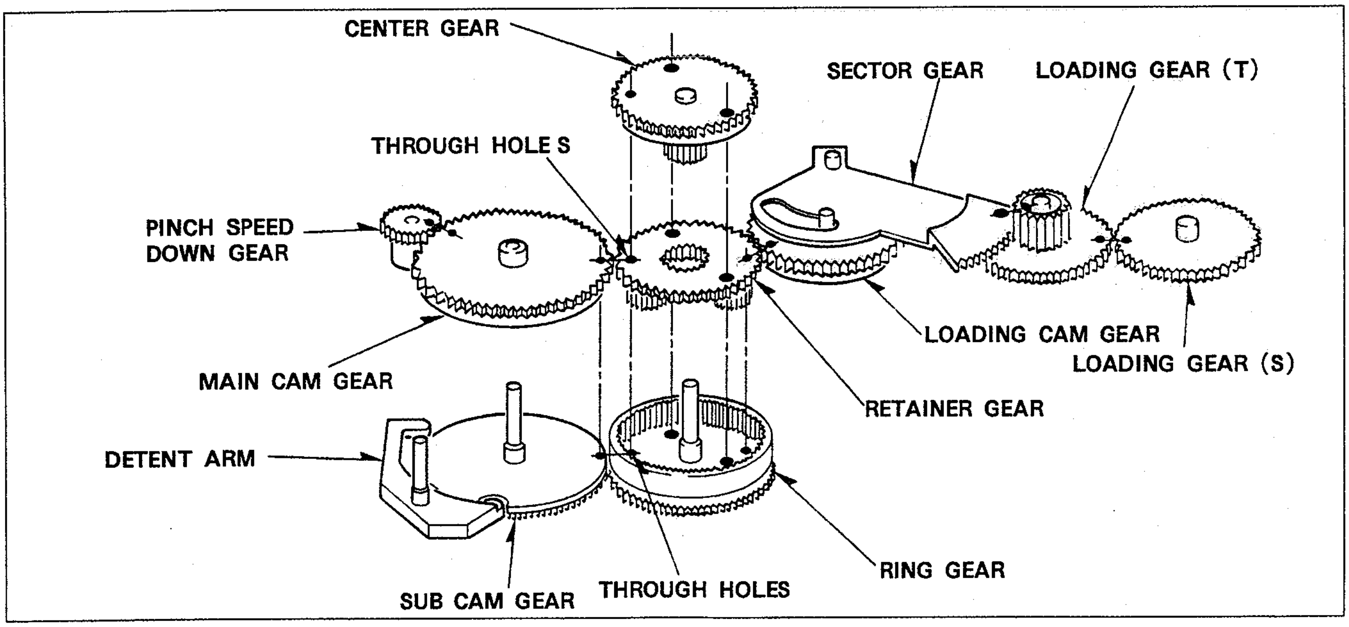

CENTER GEAR
SECTOR GEAR
LOADING GEAR (T)
THROUGH HOLE S
PINCH SPEED DOWN GEAR
LOADING CAM GEAR
LOADING GEAR (S)
MAIN CAM GEAR
RETAINER GEAR
DETENT ARM
RING GEAR
SUB CAM GEAR
THROUGH HOLES

Figure M39-C Bottom View of Overall Mechanical Condition

3-7-2. ASSEMBLY PROCEDURES OF SUB CAM GEAR RING GEAR AND DETENT ARM

1. Install the Ring Gear so that the two holes on the Ring Gear align with the two holes on the chassis as shown in Figure M40.
2. Install the Sub Cam Gear so that the large hole on Sub Cam Gear aligns with the hole on chassis.
   Also the small hole (located just outside of large hole) on Sub Cam Gear should align with the hole on Ring Gear as shown in Figure M40.
3. Confirm that the small hole on Sub Cam Gear is aligned with the small hole on Connection Gear as shown in Figure M39-B (In case of the Connection Gear is already installed).
4. Install the Detent Arm and make sure Detent Arm seats perfectly in detent of Sub Cam Gear as shown in Figure M40.

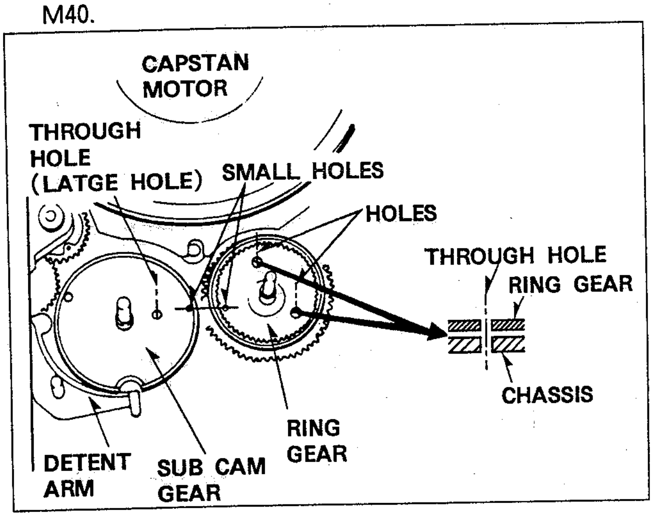

CAPSTAN MOTOR
THROUGH HOLE (LATGE HOLE)
SMALL HOLES
HOLES
THROUGH HOLE
RING GEAR
CHASSIS
RING GEAR
DETENT ARM
SUB CAM GEAR

Figure M40

3-7-3. ASSEMBLY PROCEDURES OF MAIN CAM GEAR AND PINCH SPEED DOWN GEAR

1. Install the Main Cam Gear on to the Sub Cam Gear so that the small hole on the Main Cam Gear aligns with small hole on the Ring Gear as shown in Figure M41.
2. Insert a retaining ring.
3. Install the Pinch Speed Down Gear from top side of chassis so that the small hole on the Main Cam Gear as shown in Figure M41.

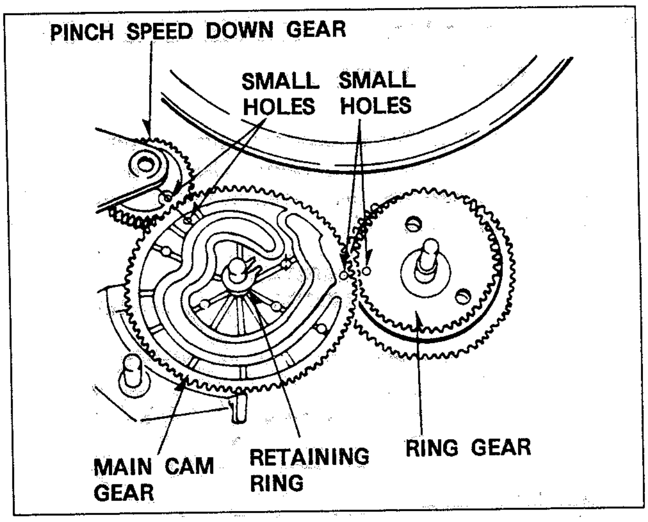

PINCH SPEED DOWN GEAR
SMALL HOLES
SMALL HOLES
MAIN CAM GEAR
RETAINING RING
RING GEAR

Figure M41

3-7-4. ASSEMBLY PROCEDURES OF LOADING CAM GEAR AND RETAINER GEAR

1. Install the Retainer Gear onto the Ring Gear so that the two holes on the Retainer Gear align with the two holes on the Ring Gear, at this time, small hole on the Main Cam Gear should aligns with small hole on the Retainer Gear as shown in Figure M42.
2. Install the Loading Cam Gear so that the small hole which is directly outside of the large hole on the Loading Cam Gear is aligned with the outside hole of the Retainer Gear as shown in Figure M42.

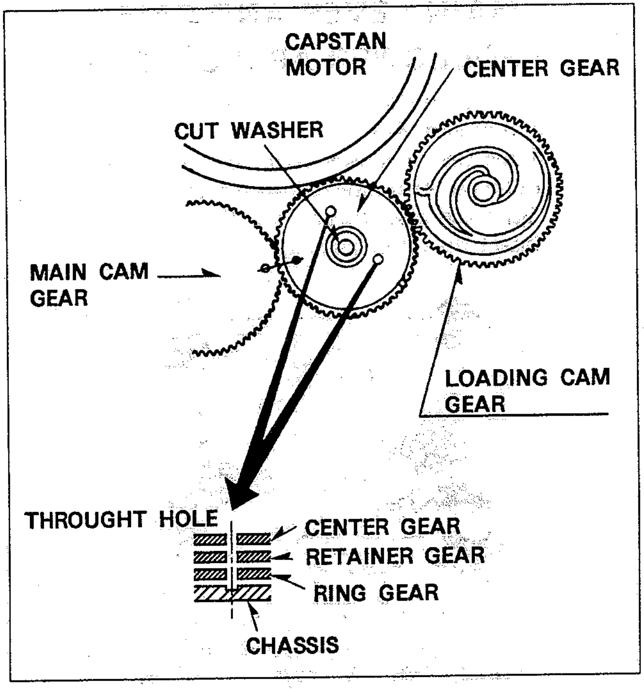

CAPSTAN MOTOR
CENTER GEAR
CUT WASHER
MAIN CAM GEAR
LOADING CAM GEAR
THROUGHT HOLE
CENTER GEAR
RETAINER GEAR
RING GEAR
CHASSIS

Figure M42

3-7-5. ASSEMBLY PROCEDURES OF CENTER GEAR

1. Softly Install the Center Gear onto the Retainer Gear so that the two holes in the Center Gear align with the holes on the Retainer Gear, then install the cut washer as shown in Figure M43.

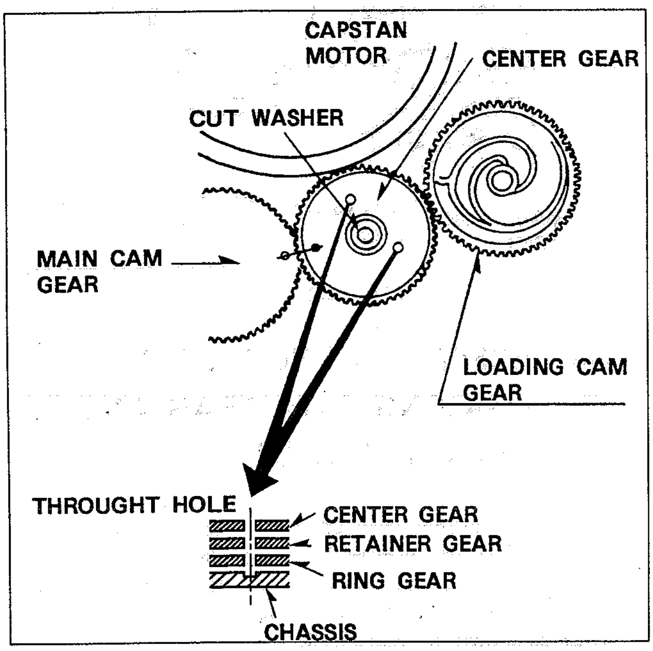

CAPSTAN MOTOR
CENTER GEAR
CUT WASHER
MAIN CAM GEAR
LOADING CAM GEAR
THROUGHT HOLE
CENTER GEAR
RETAINER GEAR
RING GEAR
CHASSIS

Figure M43

3-7-6. ASSEMBLY PROCEDURES OF MAIN LEVER AND CAM FOLLOWER ARM UNIT

1. Install the Main Rod and then insert the cut washers as shown in Figure M44.
2. Install the Cam Follower Arm so that the pin of the Cam Follower Arm inserts into the groove of the Main Cam Gear and also inserts into the slot on the Main Rod, insert the retaining ring.

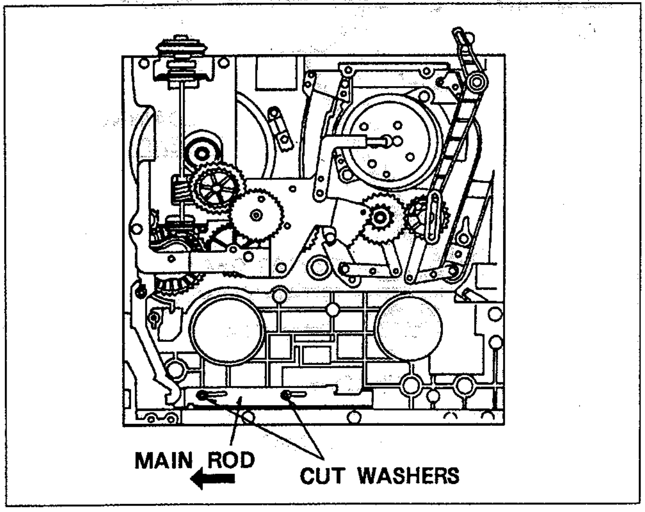

MAIN ROD
CUT WASHERS

Figure M44

3-7-7. ASSEMBLY PROCEDURES OF LOADINGGEAR (T), LOADING GEAR (S) SECTOR GEAR

1. Set the P2 and P3 posts to fully unloaded position, then install the Loading Gear (T) and (S) so that the outer hole on the Loading Gear (T) aligns with the outer hole on the Loading Gear (S) as shown in Figure M45-A.
2. Install the Sector Gear so that the outer hole in the Sector Gear aligns with the projection mark on Loading Gear (T).
3. Insert 3 retaining rings as shown in Figure M45-B.

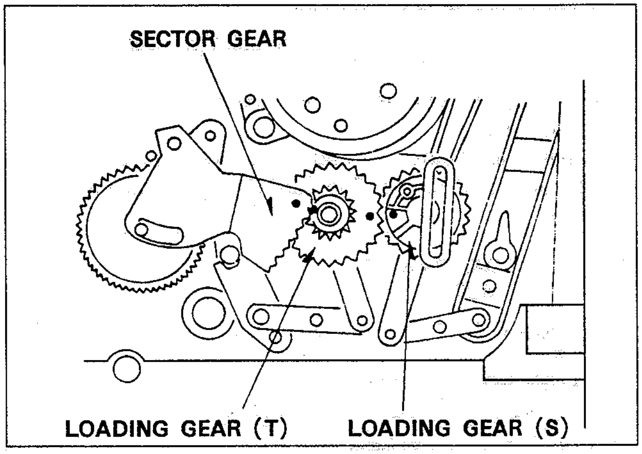

SECTOR GEAR
LOADING GEAR (T)
LOADING GEAR (S)

Figure M45-A

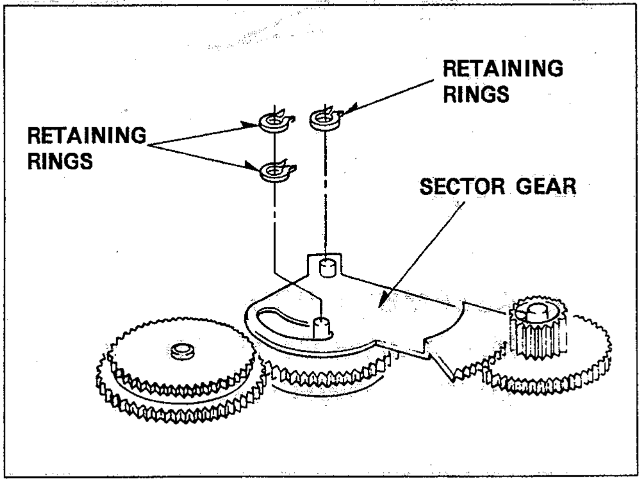

RETAINING RINGS
RETAINING RINGS
SECTOR GEAR

Figure M45-B

3-7-8. ASSEMBLY PROCEDURES OF CONNECTION GEAR

Note: Before assembling, Sub Cam Gear position (and positions of bottom side gears) must be correct as described before (Figure M39-B).

1. Install the Connection Gear so that the small hole on the Connection Gear aligns with the small hole on the Sub Cam Gear as shown in Figure M46.

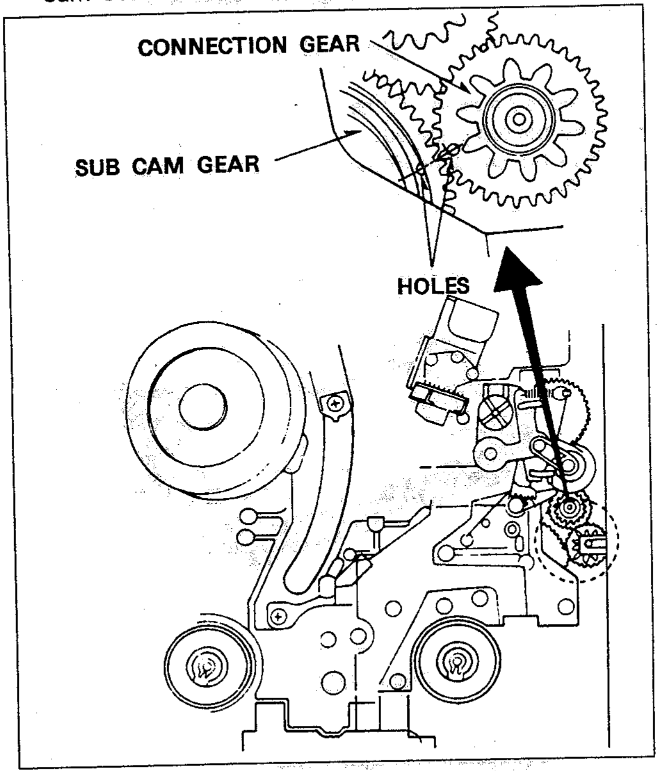

CONNECTION GEAR
SUB CAM GEAR
HOLES

Figure M46

3-7-9. ASSEMBLY PROCEDURES OF MODE SWITCH AND P5 PULL OUT SECTOR GEAR

1. Turn the Center Gear to unloading position.
2. Install the mode Select Switch and tighten the mounting screw, then solder the 5 soldering portions.
3. Install the P5 Pull Out Sector Gear so that the hole of P5 Pull Out Sector Gear aligns with the tip of gear at P5 Arm as shown in Figure M47.

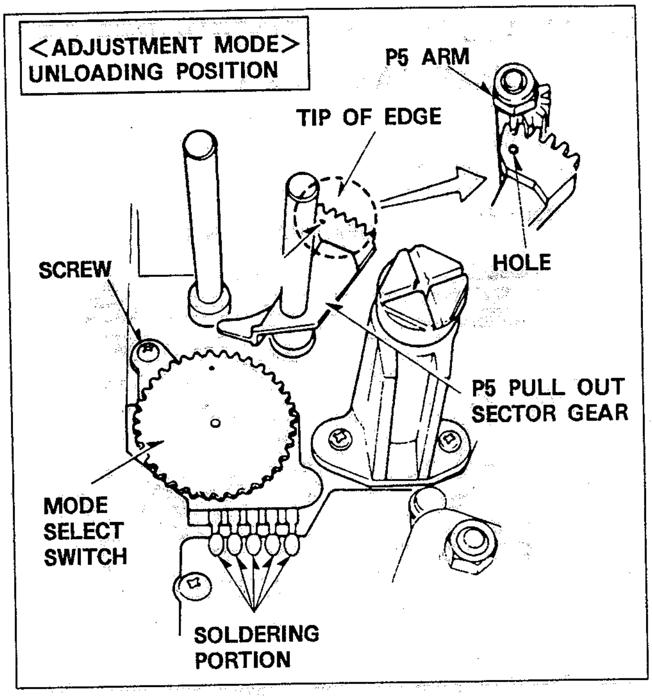

<ADJUSTMENT MODE>
UNLOADING POSITION
P5 ARM
TIP OF EDGE
SCREW
HOLE
P5 PULL OUT SECTOR GEAR
MODE SELECT SWITCH
SOLDERING PORTION

Figure M47

3-7-10. ASSEMBLY PROCEDURES OF PINCH CAM AND PRESSURE ROLLER UNIT

1. Install the Pinch Cam while pushing the P5 post forward. The gear of the Pinch Cam should drop to a seated position. In this position make sure hole in the Mode Select Switch aligns with small hole on the Pinch Cam, also the small rift on the Pinch Cam should align with the hole on the Pinch Speed Down Gear sa shown in Figure M48.
2. Install the Pressure Roller Unit. Make sure the seats perfectly onto the Pinch Cam, then install the Pinch Cam Cap.

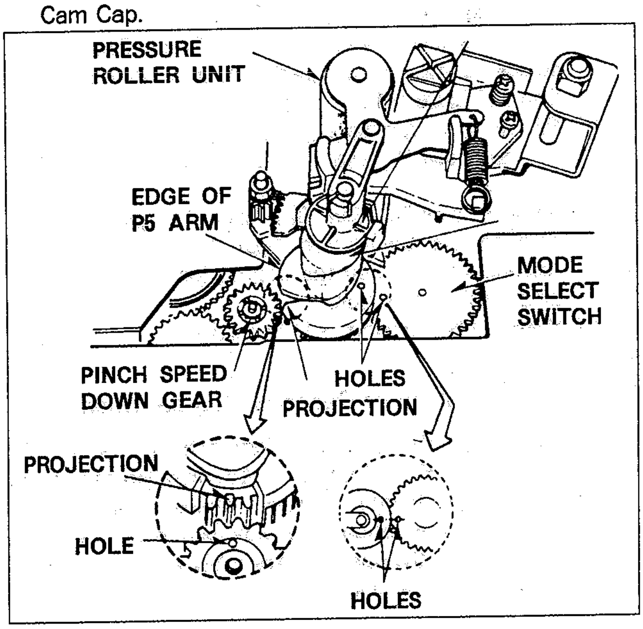

PRESSURE ROLLER UNIT
EDGE OF P5 ARM
MODE SELECT SWITCH
PINCH SPEED DOWN GEAR
HOLES
PROJECTION
PROJECTION
HOLE
HOLES

Figure M48

3-7-11. ASSEMBLY PROCEDURES OF GEAR BASE UNIT

1. Install the Gear Base Unit and screw 4 screws (F) as shown in Figure M49.

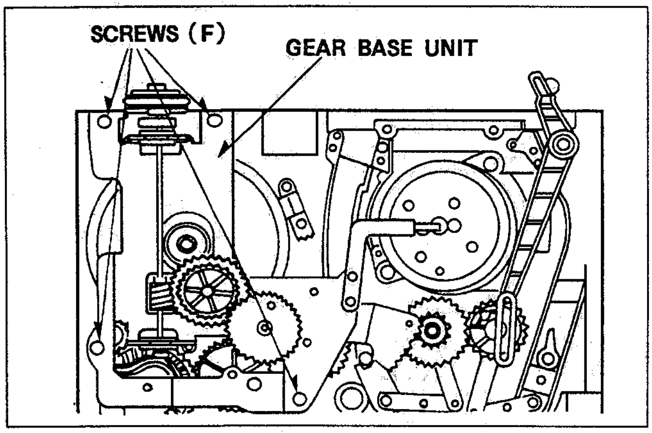


Figure M49

Note: The Gear Base Unit has 2 gears and worm shaft. There is no adjustment for these gears.

3-7-12. REINSTALLATION OF CASSETTE COMPARTMENT

When you reinstall the cassette compartment, the position adjustment of mechanism is necessary for correct operation, as follows.

A. Confirmation of STOP Alignment Condition

1. Turn the Worm shaft counter-clockwise or clockwise until mechanism is placed into the Alignment Condition as following conditions.
   a) Identification hole on the Mode Select Switch at 6 oclock position and aligned with small hole on Pinch Cam. (Figure M48)
   b) P5 Arm is completely loading position and the Inclined Base (S) and (T) are completely unloading position.
   c) Small hole on Sub Cam Gear should align with small hole on the Connection Gear (Figure M46) and rectangular mark on the Connection Gear should be at a 3 oclock position.
   d) Pressure Roller Unit is UP position.

B. Confirmation of Cassette Compartment

1. Confirm that the Cassette Compartment is aligned properly. In the EJECT position (Cassette Holder up and advanced to the front) the two V-shaped marks on the slide switch should align. The slide switch is located on the right side of the Cassette Assembly towards the rear as shown in Figure M50A.

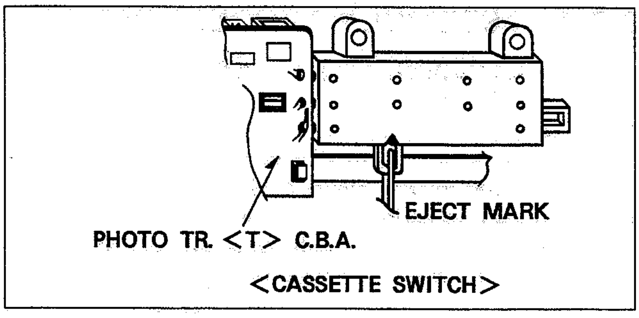


Figure M50-A

2. Remove 3 screws (A) as shown in Figure M50-B.
3. Take the top plate out.
4. Take the cassette Holder unit out as shown in Figure M50-C.

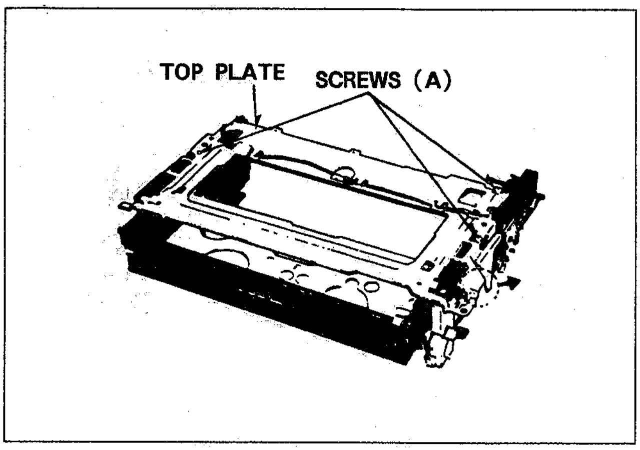


Figure M50-B

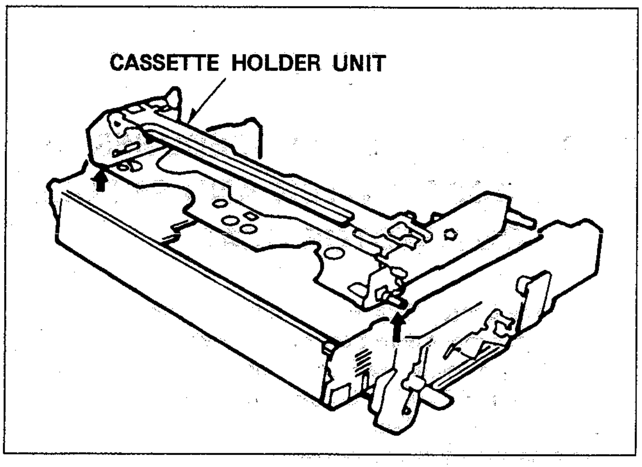


Figure M50-C Removal of Cassette Holder Unit

5. Press the sub wiper arm (R) to direction indicated by arrow so that the sub wiper arm (R) comes to cassette down position (STOP) completely as shown in Figure M50-D and keepit. In this position, the arrow on the Sub Wiper Arm (R) should align with the arrow on the Rack (A)(1) Unit as shown in Figure M50-E.

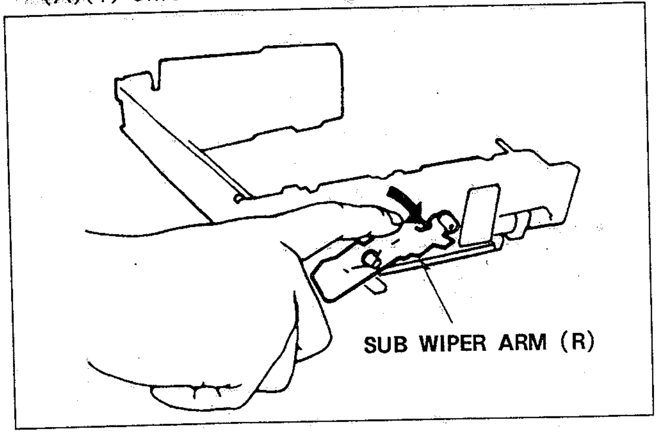

SUB WIPER ARM (R)

Figure M50-D

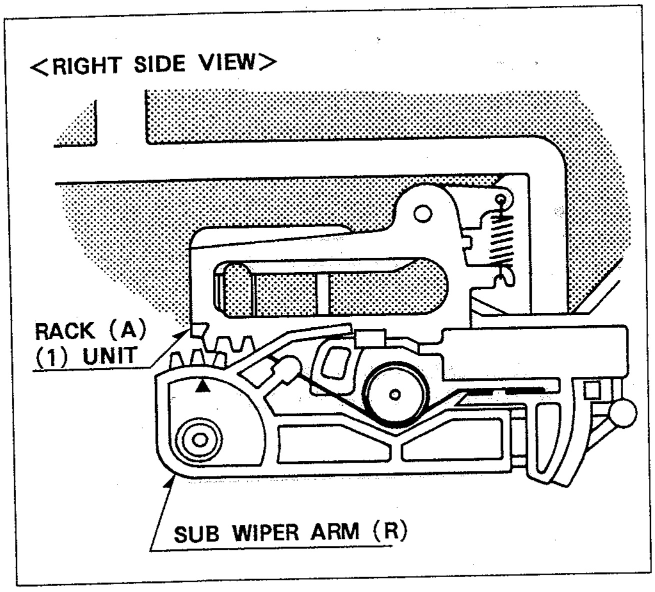

<RIGHT SIDE VIEW>
RACK (A) (1) UNIT
SUB WIPER ARM (R)

Figure M50-E

6. If the Cassette Compartment is not aligned, realignment may be accomplished by pushing the Main Shaft Unit to the right (gently) and pushing the front of the Rack Unit to the left. This procedure will disengage the teeth of the Rack Gear from the teeth on Sub Wiper Arm assembly.
   This will allow you to change the positional relationship between the Sub Wiper Arm Assembly and Rack Unit. This procedure is best attempted in the EJECT position. Once this is done, check for smooth operation of the compartment by inserting a cassette, and pushing in, and down.

C. Installation Procedure

1. Bring loading mechanism to the STOP (Sub-load) position.
2. Confirm that the chassis is aligned properly for Alignment Condition as shown in Figure M39-B and M39-C.
3. Put the Sub Wiper Arm (R) in its full down position (Sub Wiper Arm should rest on plastic protrusion on the bottom of the right side plate).
4. Install the cassette compartment (without cassette holder) to chassis so that the rectangular marking (or slot) on the connection gear should be line up with first tooth of the Rack Gear as shown in Figure M50-F and M50-G.

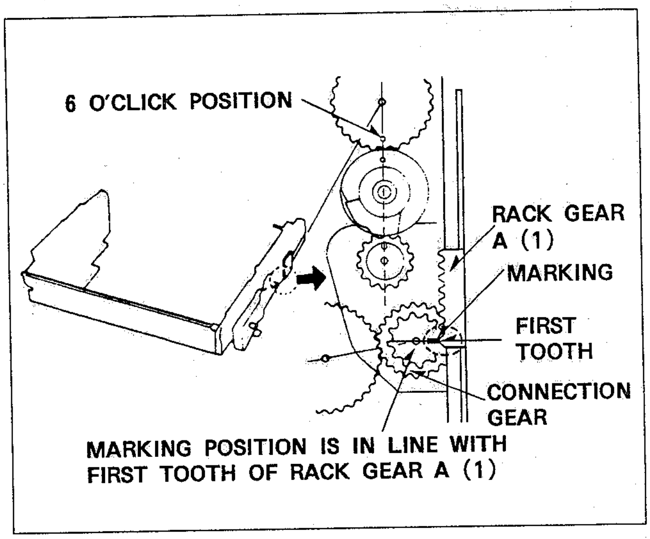

6 O'CLICK POSITION
RACK GEAR A (1)
MARKING
FIRST TOOTH
CONNECTION GEAR
MARKING POSITION IS IN LINE WITH FIRST TOOTH OF RACK GEAR A (1)

Figure M50-F

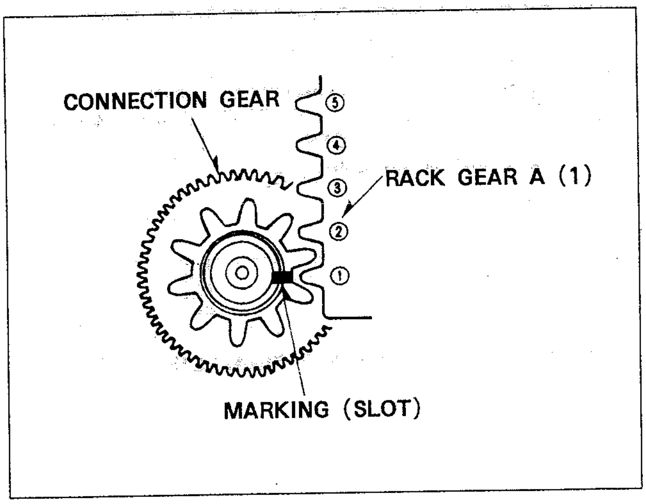

CONNECTION GEAR
⑤
④
③
RACK GEAR A (1)
②
①
MARKING (SLOT)

Figure M50-G

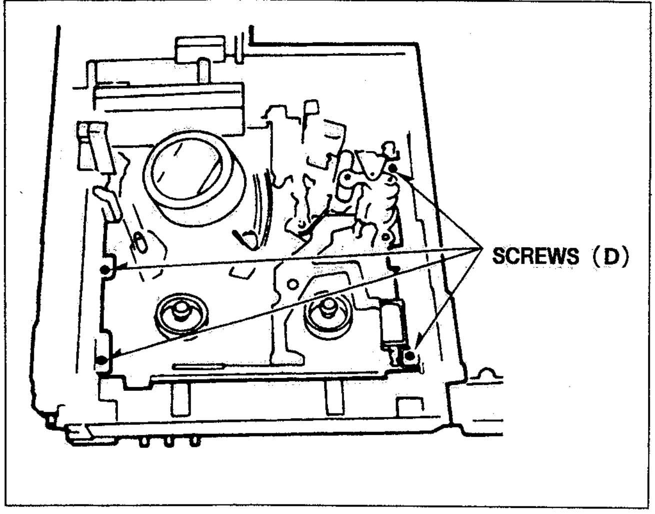


Figure M50-H

5. Tighten the 4 screws (D) as shown in Figure M50-H.
6. Manually move the loading mechanism toward the EJECT position.
7. Stop the manual eject procedure just before completion, so that the Sub Wiper Arms straight up. This position is also characterized by the channel guides (in the Wiper Arms) being directly under the cut outs on the top of the Cassette Compartment base (Figure M50-I).
8. Install the Cassette Holder Unit in the Cassette Compartment Base. The Cassette holder should drop into place if the Sub Wiper Arms are portioned as called for in step 7.

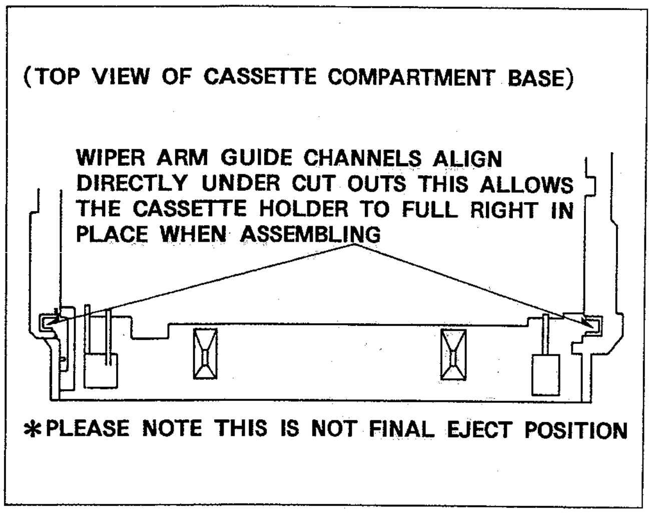

(TOP VIEW OF CASSETTE COMPARTMENT BASE)
WIPER ARM GUIDE CHANNELS ALIGN DIRECTLY UNDER CUT OUTS THIS ALLOWS THE CASSETTE HOLDER TO FULL RIGHT IN PLACE WHEN ASSEMBLING
*PLEASE NOTE THIS IS NOT FINAL EJECT POSITION

Figure M50-I

Note: For proper front loading, the guide pin on the opener lever should follow the upper track of the right side panel as shown in Figure M50-J.

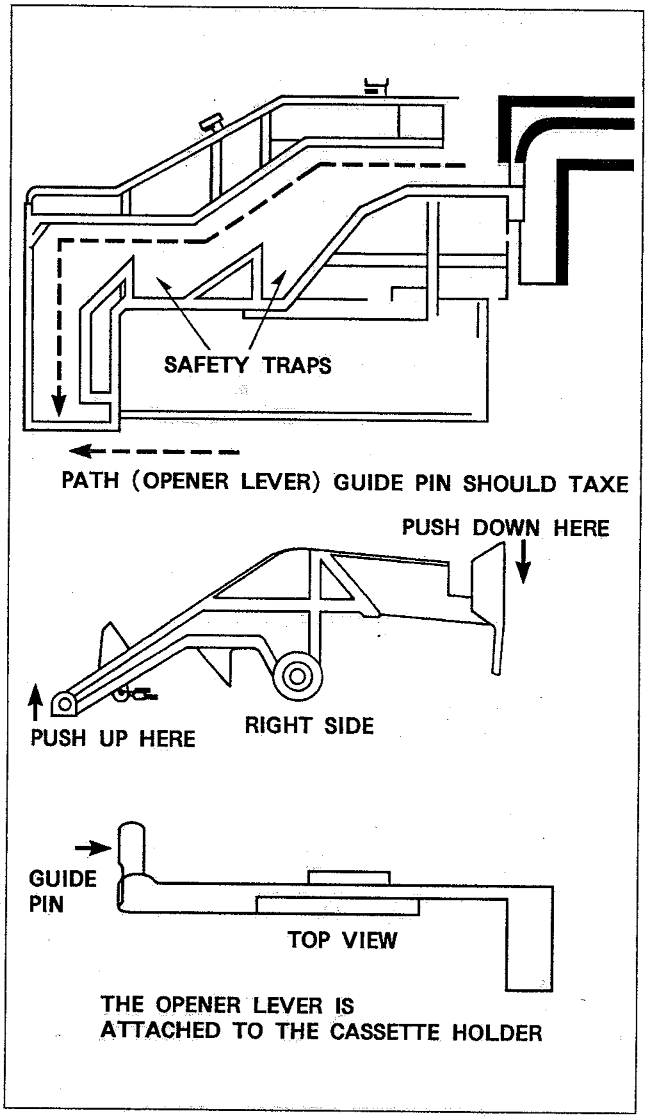

SAFETY TRAPS
PATH (OPENER LEVER) GUIDE PIN SHOULD TAXE
PUSH DOWN HERE
PUSH UP HERE
RIGHT SIDE
GUIDE PIN
TOP VIEW
THE OPENER LEVER IS ATTACHED TO THE CASSETTE HOLDER

Figure M50-J Right Side Plate

9. Install the top plate on the Cassette Compartment Base and tighten the 3 screws (A) as shown in Figure M50-B.
10. Manually confirm that front loading and main loading run smoothly. Also confirm EJECT before power is applied.

SECTION 4

ELECTRICAL ADJUSTMENTS

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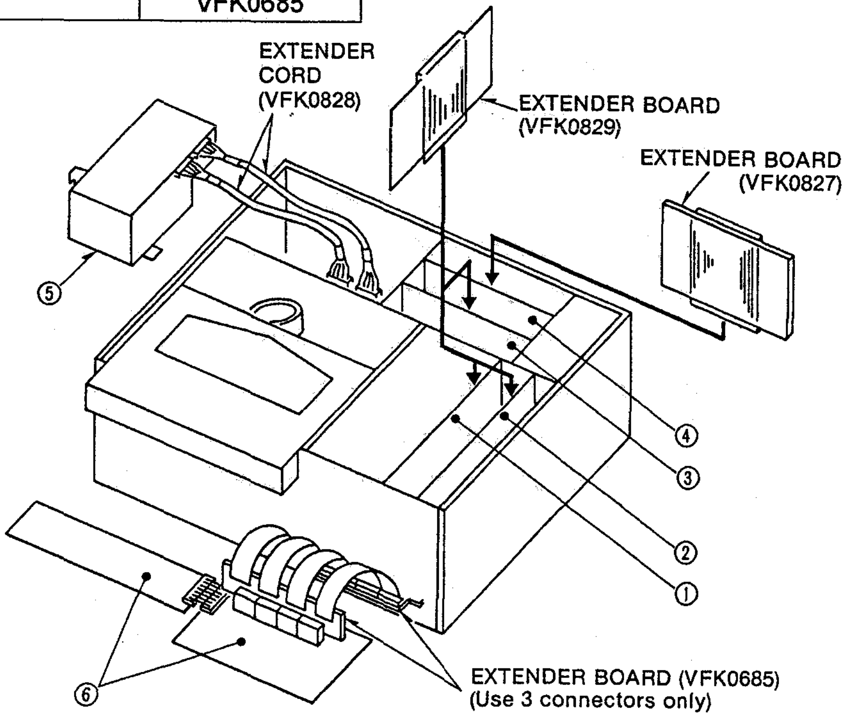
4-1. TEST & SERVICE EQUIPMENT

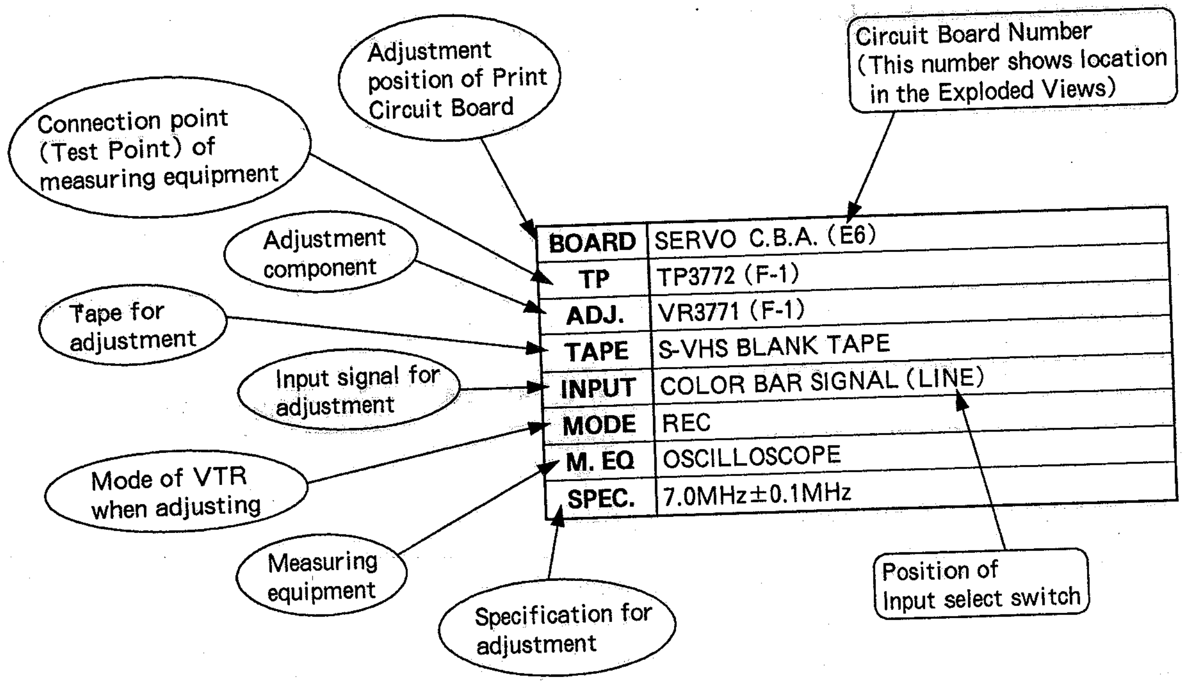
No.	EQUIPMENT	CAPACITY
1	VTVM(Vacuum Tube Volt Meter) or DVM(Digital Volt Meter)	0.001 to 50V
2	Dual-Trace Oscilloscope (with Probes)	0.005 to 50V/div, DC to 20MHz
3	Frequency Counter	0 to 10MHz
4	Sinewave Signal Generator (RC Oscillator)	0 to 10MHz
5	Video Sweep Generator	0 to 10MHz
6	Waveform Monitor	
7	Video Signal Generator(Composite)	Color Bar / Multi Burst / Sin^2 Pulse & Bar etc.
8	Spectrum Analyzer	
9	Vector Scope	
10	Colour Monitor TV	
11	VHS Alignment Tape (VFM8080HQFP)	
12	Extender Board (VFK0827)(32Pin)	
13	Extender Board (VFK0829)(64Pin)	

Please use the Extender Boards (VFK0827, 0829) for adjusting or checking of following P.C.Boards.

NO.	P.C.BOARD	EXTENDER
1	VIDEO (2) C.B.A.	VFK0829
2	VIDEO (3) C.B.A.	
3	SYSCON C.B.A.	
4	AUDIO C.B.A.	VFK0827
5	POWER SUPPLY UNIT	VFK0828
6	FRONT (1), (2) C.B.A.	VFK0685


EXTENDER CORD (VFK0828)
EXTENDER BOARD (VFK0829)
EXTENDER BOARD (VFK0827)
⑤
④
③
②
①
⑥
EXTENDER BOARD (VFK0685) (Use 3 connectors only)

4-2. HOW TO READ THE ADJUSTMENT PROCEDURES TABLE


Connection point (Test Point) of measuring equipment
Adjustment position of Print Circuit Board
Circuit Board Number (This number shows location in the Exploded Views)
Adjustment component
Tape for adjustment
Input signal for adjustment
Mode of VTR when adjusting
Measuring equipment
Specification for adjustment
Position of Input select switch

BOARD	SERVO C.B.A. (E6)
TP	TP3772 (F-1)
ADJ.	VR3771 (F-1)
TAPE	S-VHS BLANK TAPE
INPUT	COLOR BAR SIGNAL (LINE)
MODE	REC
M. EQ	OSCILLOSCOPE
SPEC.	7.0MHz±0.1MHz

4-3. FRONT SECTION

4-3-1. TIME DATE CLOCK ADJ(1).

BOARD	FRONT (1) C.B.A.
TP	TP6601 (F-1)
ADJ.	CT6602 (F-1)
TAPE	————
INPUT	————
MODE	————
M. EQ	FREQUENCY COUNTER
SPEC.	122.070±0.001μs

1. Connect a jumper wire between TP6002 and TP6003 on the system control C.B.A.
2. Set the program switch at the TIME ADJ. position.
3. Press the METER button on the Front Panel.
4. Turn off the display.
5. Connect the Frequency counter to TP 6601 and TPG.
6. Adjsut CT6602 so that the freqency is 122.07±0.001μs.
7. After this adjustment,remove the jumper wire from TP6002 and TP6003.
8. Turn on the all display.

4-3-2. TIME DATE CLOCK ADJ(2).

BOARD	FRONT (1) C.B.A.
TP	TP6601
ADJ.	CT6602
TAPE	————
INPUT	————
MODE	————
M. EQ	FREQUENCY COUNTER
SPEC.	1048.580±0.006KHz

1. Connect the frequency counter to TP6601and TPG.
2. Adjust CT6601 so that the frequency 1048.580 ± 0.006KHz .

4-4. SERVO SECTION

4-4-1. PG SHIFTER ADJ.

BOARD	SERVO C.B.A.
TP	VIDEO OUT TP 1:VIDEO 2 C.B.A.
ADJ.	VR2002:SERVO&SYSTEM CTL C.B.A.
TAPE	VFM8080HQFP PORTION:2
INPUT	————
MODE	PLAYBACK
M. EQ	OSCILLOSCOPE
SPEC.	T=6.5H ±0.5H

≪NOTE≫

Tape interchangeability adjustment should be always completed before this adjustment.

1. Play back the 2nd portion of the aligment tape .
2. Connect the oscilloscope CH1to the video output and CH2 to TP1 on the Video 2 C.B.A.
3. Adjust VR2002 so that the head switching point (T) is 6.5H±0.5H as shown in Figure E1.

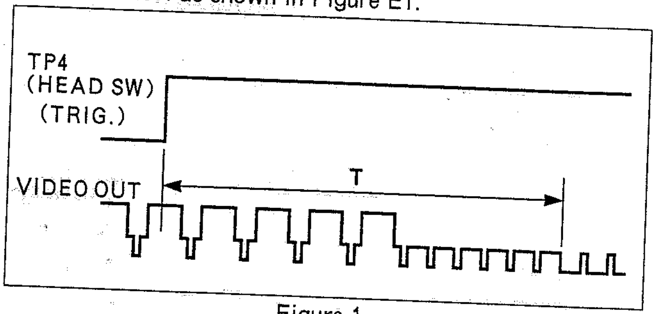


Figure 1

4-4-2. SLOW FREE RUN ADJ.

BOARD	SERVO C.B.A.
TP	TP6004
ADJ.	VR2001
TAPE	VFM8080HQFP
INPUT	————
MODE	STILL(2H MODE)
M. EQ	FREQUENCY COUNTER
SPEC.	F=680Hz±5Hz

1. Connect a jumper wire between TP6002 and TP6003 on the System Control C.B.A..
2. Play back the 2nd portion of the alignment tape.
3. Connect the frequency counter to TP6004 on the System control C.B.A.
4. Adjust VR2001 so that the frequency is 680Hz±5Hz.
5. After this adjustment , remove the jumper wire from TP6002 and TP6003.

4-4-3. SLOW TRACKING ADJ.

BOARD	SERVO C.B.A.
TP	TP4
ADJ.	6H VR 2006 (FWD) 6H VR 2005 (REV)
TAPE	SALFE RECORDED TAPE
INPUT	————
MODE	PLAY,REV PLAY (24H T - MODE)
M. EQ	MONITOR TV
SPEC.	NO NOISE BAR

≪NOTE≫

This adjustment should be always performed after completing SLOW FREE RUN adjustment.

1. Record a color bar signal in the 6H modes for a few minute and play back the just 6H recorded portion in the 24H FWD play mode.
2. Set the tracking control to the fix position by pressing the tracking (+) ／ (−) keys simaltoneously.
3. Connect a MONITOR TV to the video output.
4. Adjust VR2006 so that noise band is disappeared on the Monitor TV.

5. Play back the just 6H recorded portion in the 24H REV PLAY mode.
6. Adjust VR2005 (REV) so that noise band is disappeared on the Monitor TV.

4-4-5. V - LOCK ADJ.

BOARD	SERVO C.B.A.
TP	VIDEO OUT
ADJ.	VR2003(6H)
TAPE	BLANK TAPE
INPUT	COLOR BAR
MODE	STILL
M. EQ	MONITOR TV
SPEC.	NO DANCING APPEAR

≪ NOTE ≫
SLOW TRACKING adjustment should be completed before this adjustment.

1. Record a color bar signal for a few minute in the 6H recording mode.
2. Play back the just recorded portion.
3. Adjust VR2003 so that the V - dancing is disappeared.

4-5.VIDEO SECTION

4-5-1. OSD AGC ADJ.

BOARD	VIDEO 3 C.B.A.
TP	TP3001
ADJ.	VR3002
TAPE	————
INPUT	COLOR BAR
MODE	EJECT (E-E)
M. EQ	OSCILLOSCOPE
SPEC.	2.0Vp-p ± 0.01Vp-p

1. Supply a color bar signal to the Video input .
2. Connect the oscilloscope to TP3001.
3. Adjust VR 3002 so that the video level is 2.0 ± 0.01Vp-p as shownin Figure below.

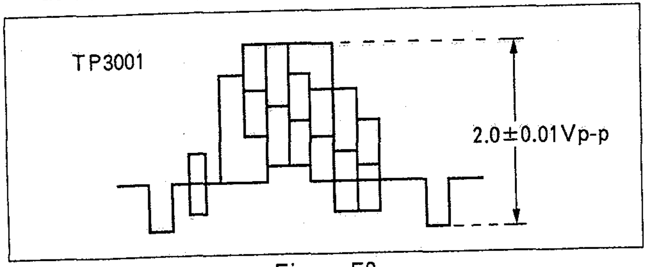


Figure E2.

4-5-2. VIDEO E-E LEVEL ADJ.

BOARD	VIDEO C.B.A.
TP	VIDEO OUT
ADJ.	VR8003
TAPE	————
INPUT	COLOR BAR
MODE	EJECT (E-E)
M. EQ	OSCILLOSCOPE
SPEC.	1.0Vp-p ± 0.05V

1. Supply a color bar signal to the video input.
2. Connect the oscilloscope to the video output with a 75 ohm termination.
3. Adjust VR 8003 so that the video level is 1.0 ± 0.05Vp-p as shownin Figure below.

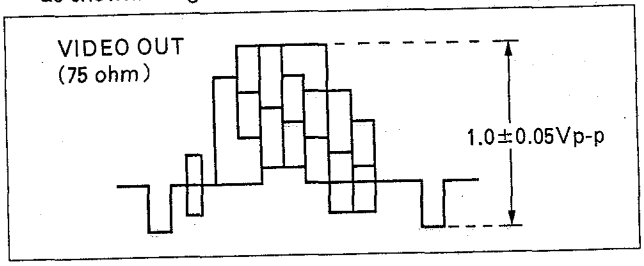


Figure E3.

4-5-3. RECORDING CURRENT ADJ.

BOARD	HEAD AMP C.B.A.
TP	TP507 (HOT) , TP508 (GND)
ADJ.	VR5001 (REC Y), VR5002 (REC C)
TAPE	BLANK TAPE
INPUT	COLOR BAR
MODE	RECORDING
M. EQ	OSCILLOSCOPE
SPEC.	32mVp-p±2mV(C),150mVp-p±5mV(Y)

1. Supply a color bar signal to the video input.
2. Connect the oscilloscope to TP507 (HOT) and TP508 (GND).
3. Before the chrominance recording current adjustment, the luminance recording current (VR501) should be closed to observe the chrominance signal.
4. Adjust VR5002 so that the cyan level of the chrominance signal is 32mVp-p±2mVp-p as shown in Figure below.
5. After step 4. adjust VR5001so that the sync level is 150mVp-p±5mV as shown in Figure below.

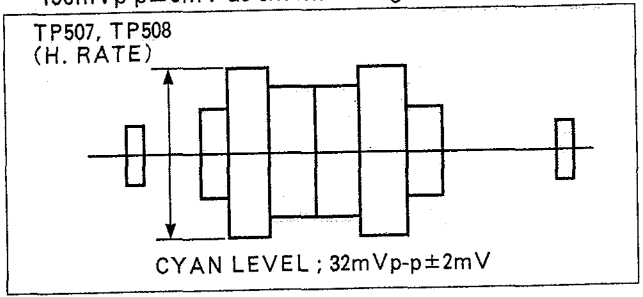


Figure E4-A

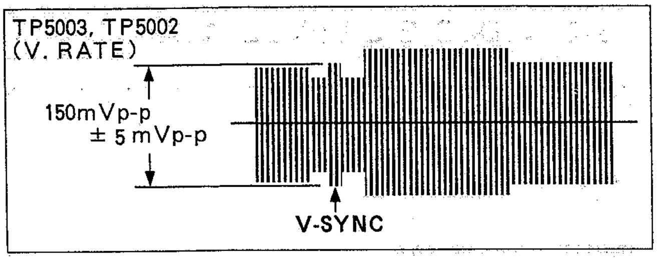


Figure E4-B.

4-5-4. PLAYBACK LEVEL ADJ.

BOARD	VIDEO C.B.A.
TP	VIDEO OUT
ADJ.	VR3006
TAPE	VHS SELF RECORDED TAPE
INPUT	COLOR BAR
MODE	PLAYBACK
M. EQ	OSCILLOSCOPE
SPEC.	Y=1.0±0.05Vp-p

≪ NOTE ≫
This adjustment should be always completed after completion of all adjustment on the recording loop .

1. Supply a color bar signal to the video input and record it for a few minute
2. Connect the oscilloscope to the video output with a 75 ohm termination.
3. Play back the just recorded portion.
4. Adjust VR3006 so that the video level is 1.0Vp-p ± 0.05V as shown below.

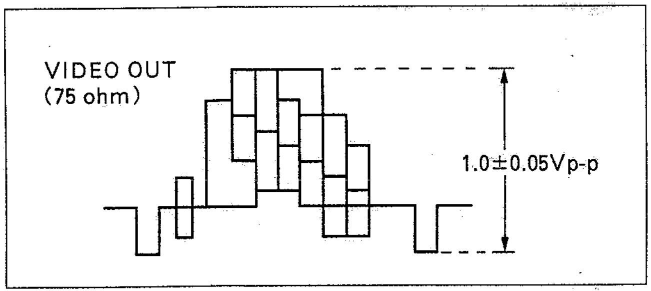


Figure E5

4-5-5. Y BALANCE ADJ.

BOARD	VIDEO C.B.A.
TP	TP 8005
ADJ.	VR8001
TAPE	
INPUT	COLOR BAR SIGNAL
MODE	EJECT (E-E)
M. EQ	OSCILLOSCOPE
SPEC.	LESS THAN 50mVp-p

1. Supply a color bar signal to the video input.
2. Connect the oscilloscope to TP8005.
3. Adjust VR8001 so that the waveform becomes minimum as possible (less than 50mVp-p) as shown below.

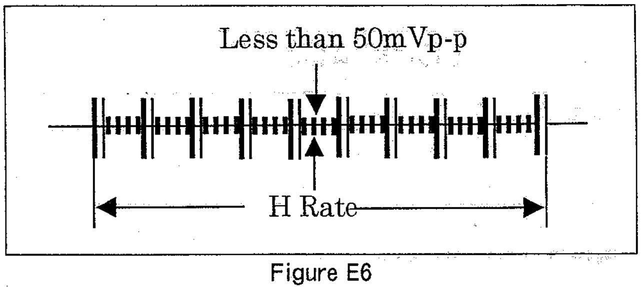


Figure E6

4-6. AUDIO SECTION

4-6-1. AUDIO BIAS CURRENT ADJ.

BOARD	AUDIO C.B.A.
TP	TP4001(HOT),TP4002(COLD)
ADJ.	VR4002
TAPE	————
INPUT	
MODE	REC
M. EQ	V.T.V.M.
SPEC.	2.6±0.1mVrms

≪ NOTE ≫
Connect a jumper wire between the audio input and GND.

1. Insert a VHS blank tape and place the unit in the recording mode.
2. Connect the V.T.V.M to TP4001 (HOT) and TP4002(GND)
3. Adjust VR4002 so that the level is 2.6±0.1mVrms.

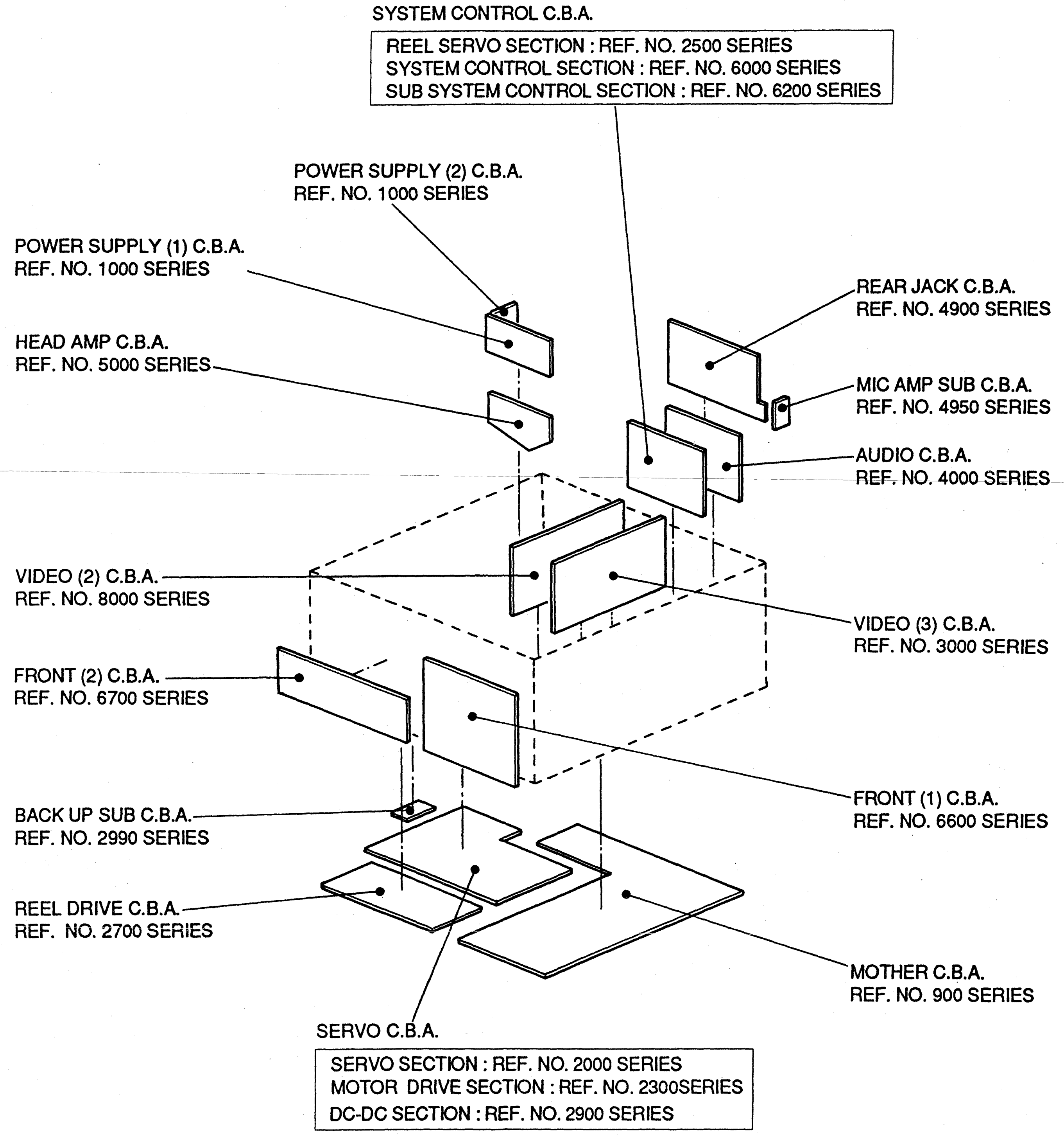
4-6-2. AUDIO PB LEVEL ADJ.

BOARD	AUDIO C.B.A.
TP	AUDIO OUT
ADJ.	VR4001
TAPE	AELF RECORDED TAPE
INPUT	SINE WAVE(1KHz,−10dB)
MODE	PLAYBACK
M. EQ	V.T.V.M.
SPEC.	PB LEVEL = EE LEVEL ±0.5dB

≪ NOTE ≫
Before this adjustment "Tape Interchangeability Adjustment"and "Audio Current Adjustment" should be completed.

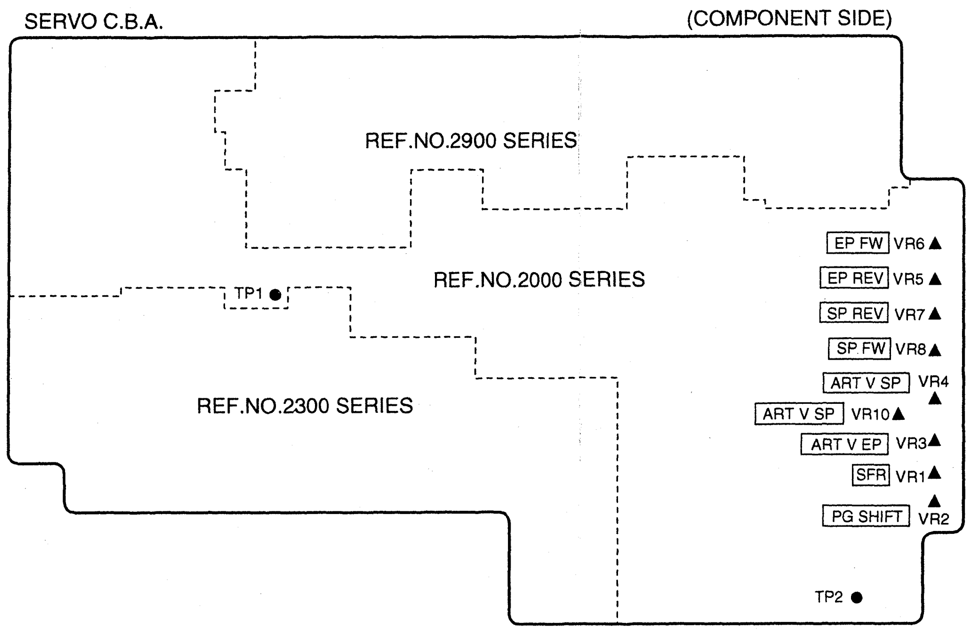
1. Connect the V.T.V.M. to the Audio output.
2. Supply a sine wave signal (1KHz,−10dB) to the Audio input and record it for a few minite.
3. Massure the Audio E-E level.
4. Playback the just recorded portion.
5. Adjust VR4001 so that play back level is equal to the E-Elevel.

CIRCUIT BOARD LAYOUT

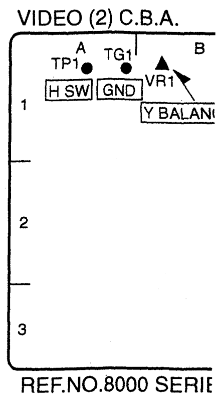


SYSTEM CONTROL C.B.A.
REEL SERVO SECTION : REF. NO. 2500 SERIES
SYSTEM CONTROL SECTION : REF. NO. 6000 SERIES
SUB SYSTEM CONTROL SECTION : REF. NO. 6200 SERIES
POWER SUPPLY (2) C.B.A.
REF. NO. 1000 SERIES
POWER SUPPLY (1) C.B.A.
REF. NO. 1000 SERIES
HEAD AMP C.B.A.
REF. NO. 5000 SERIES
REAR JACK C.B.A.
REF. NO. 4900 SERIES
MIC AMP SUB C.B.A.
REF. NO. 4950 SERIES
AUDIO C.B.A.
REF. NO. 4000 SERIES
VIDEO (2) C.B.A.
REF. NO. 8000 SERIES
VIDEO (3) C.B.A.
REF. NO. 3000 SERIES
FRONT (2) C.B.A.
REF. NO. 6700 SERIES
FRONT (1) C.B.A.
REF. NO. 6600 SERIES
BACK UP SUB C.B.A.
REF. NO. 2990 SERIES
REEL DRIVE C.B.A.
REF. NO. 2700 SERIES
MOTHER C.B.A.
REF. NO. 900 SERIES
SERVO C.B.A.
SERVO SECTION : REF. NO. 2000 SERIES
MOTOR DRIVE SECTION : REF. NO. 2300SERIES
DC-DC SECTION : REF. NO. 2900 SERIES

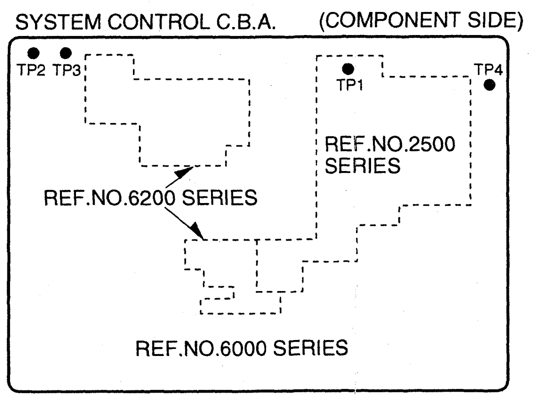
LOCATION OF TEST POINTS & CONTROLS



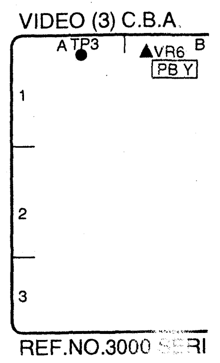
SERVO C.B.A.
(COMPONENT SIDE)
REF.NO.2900 SERIES
REF.NO.2000 SERIES
REF.NO.2300 SERIES
TP1
TP2
EP FW VR6
EP REV VR5
SP REV VR7
SP FW VR8
ART V SP VR4
ART V SP VR10
ART V EP VR3
SFR VR1
PG SHIFT VR2



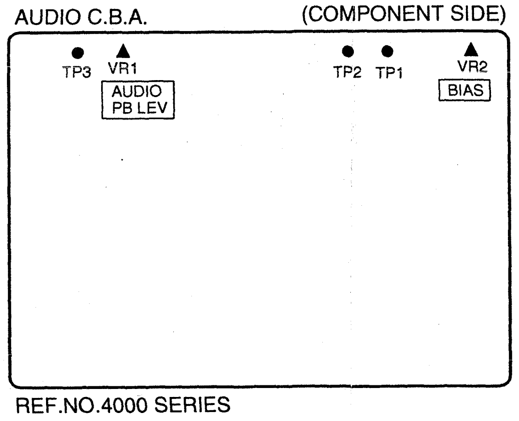
VIDEO (2) C.B.A.
A
B
TP1
TG1
VR1
H SW
GND
Y BALAN
1
2
3
REF.NO.8000 SERIE



SYSTEM CONTROL C.B.A.
(COMPONENT SIDE)
TP2 TP3
TP1
TP4
REF.NO.2500 SERIES
REF.NO.6200 SERIES
REF.NO.6000 SERIES



VIDEO (3) C.B.A.
A
TP3
VR6
B
PB Y
1
2
3
REF.NO.3000



AUDIO C.B.A.
(COMPONENT SIDE)
TP3 VR1
AUDIO PB LEV
TP2 TP1
VR2
BIAS
REF.NO.4000 SERIES

A.
ERIES

B.A.
ERIES

ERIES

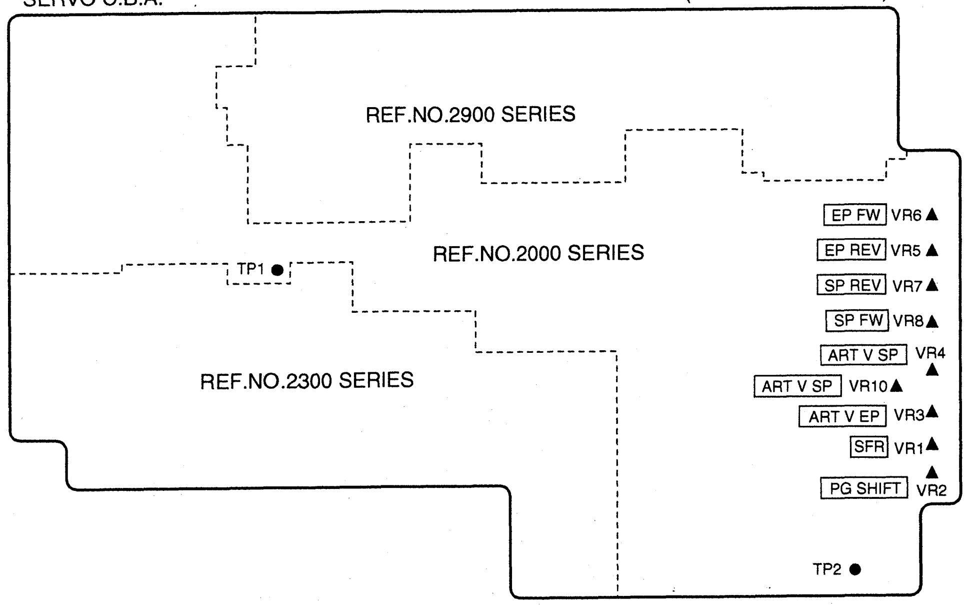
ERIES

ERIES

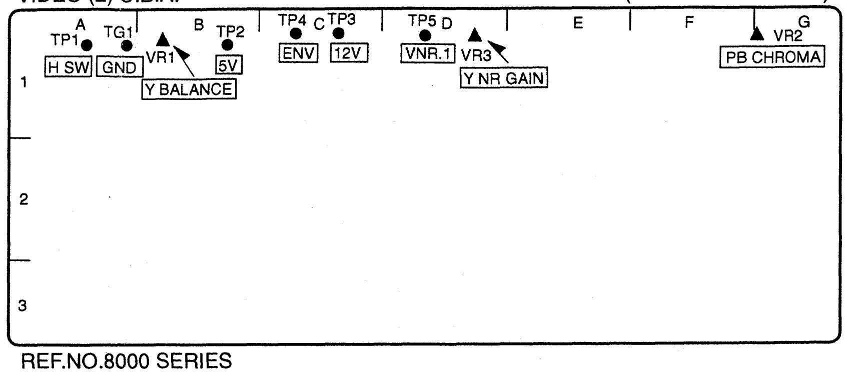
IES

LOCATION OF TEST POINTS & CONTROLS

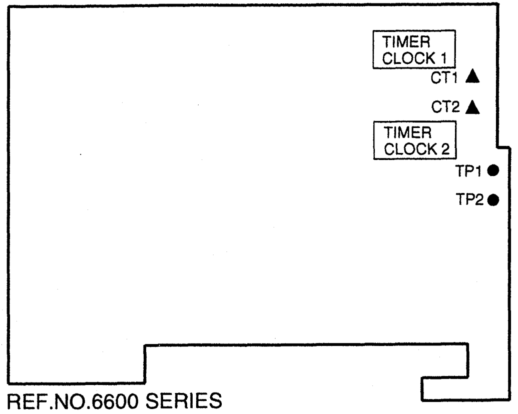
SERVO C.B.A. (COMPONENT SIDE)


REF.NO.2900 SERIES
REF.NO.2000 SERIES
REF.NO.2300 SERIES
TP1
EP FW VR6
EP REV VR5
SP REV VR7
SP FW VR8
ART V SP VR4
ART V SP VR10
ART V EP VR3
SFR VR1
PG SHIFT VR2
TP2

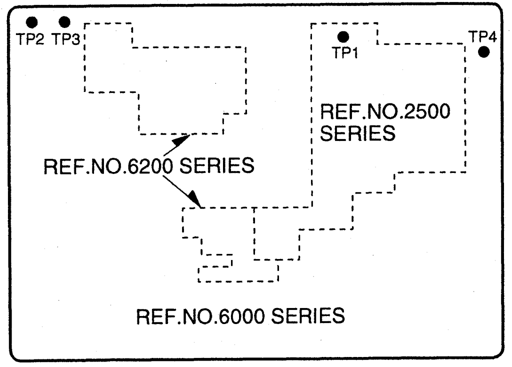
VIDEO (2) C.B.A. (COMPONENT SIDE)


A
B
C
D
E
F
G
1
2
3
TP1
TG1
VR1
TP2
TP4
TP3
TP5
VR3
VR2
H SW
GND
5V
Y BALANCE
ENV
12V
VNR.1
Y NR GAIN
PB CHROMA
REF.NO.8000 SERIES

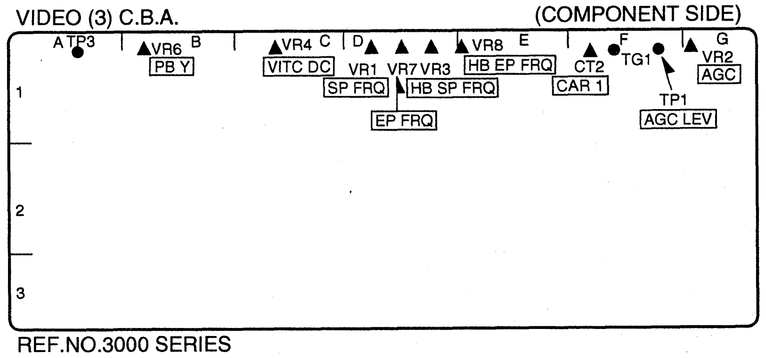
FRONT (1) C.B.A. (COMPONENT SIDE)


TIMER CLOCK 1
CT1
CT2
TIMER CLOCK 2
TP1
TP2
REF.NO.6600 SERIES

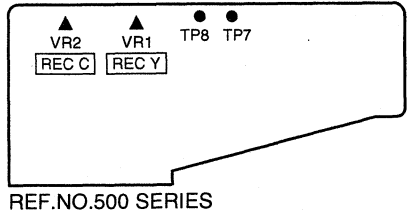
SYSTEM CONTROL C.B.A. (COMPONENT SIDE)


TP2
TP3
TP1
TP4
REF.NO.2500 SERIES
REF.NO.6200 SERIES
REF.NO.6000 SERIES

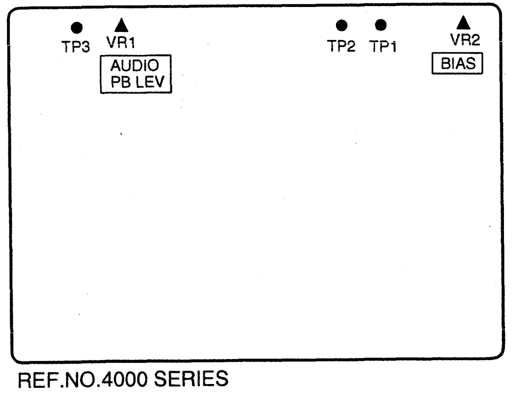
VIDEO (3) C.B.A. (COMPONENT SIDE)


A
B
C
D
E
F
G
1
2
3
TP3
VR6
PB Y
VR4
VITC DC
VR1
VR7
VR3
VR8
SP FRQ
HB SP FRQ
HB EP FRQ
EP FRQ
CT2
CAR 1
TG1
TP1
AGC LEV
VR2
AGC
REF.NO.3000 SERIES

HEAD AMP C.B.A. (COMPONENT SIDE)


VR2
VR1
TP8
TP7
REC C
REC Y
REF.NO.500 SERIES

AUDIO C.B.A. (COMPONENT SIDE)


TP3
VR1
AUDIO PB LEV
TP2
TP1
VR2
BIAS
REF.NO.4000 SERIES

POWER SUPPLY 1 C.B.A. (E1) AND POWER SUPPLY 2 C.B.A. (E2)

JAPAN ONLY

⚠ 警　告

AC100Vの加わっている活電部（充電部、活電部）に直接触れないでください。

感電注意

☞ 感電ややけどの可能性があります。

① ⚠ 警　告　⚠印の部品は安全上重要な部品です。交換するときは、安全および性能維持のため必ず指定の部品をご使用ください。

② ☐ 内は充電部です。AC 100Vが加わっておりますので点検、修理のときは感電しないよう充分ご注意ください。

③ 部品交換時には、電源プラグをぬいてから行ってください。

④ 一次側（充電部）の電圧・波形は、一次側アースを基準に測定してください。

⑤ 部品品番は、部品価格表で確認の上交換ください。

CAUTION

THE ▬ MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

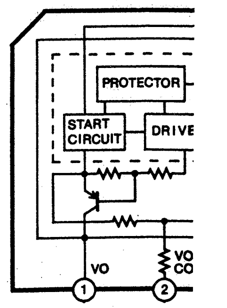
IMPORTANT SAFETY NOTICE:

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

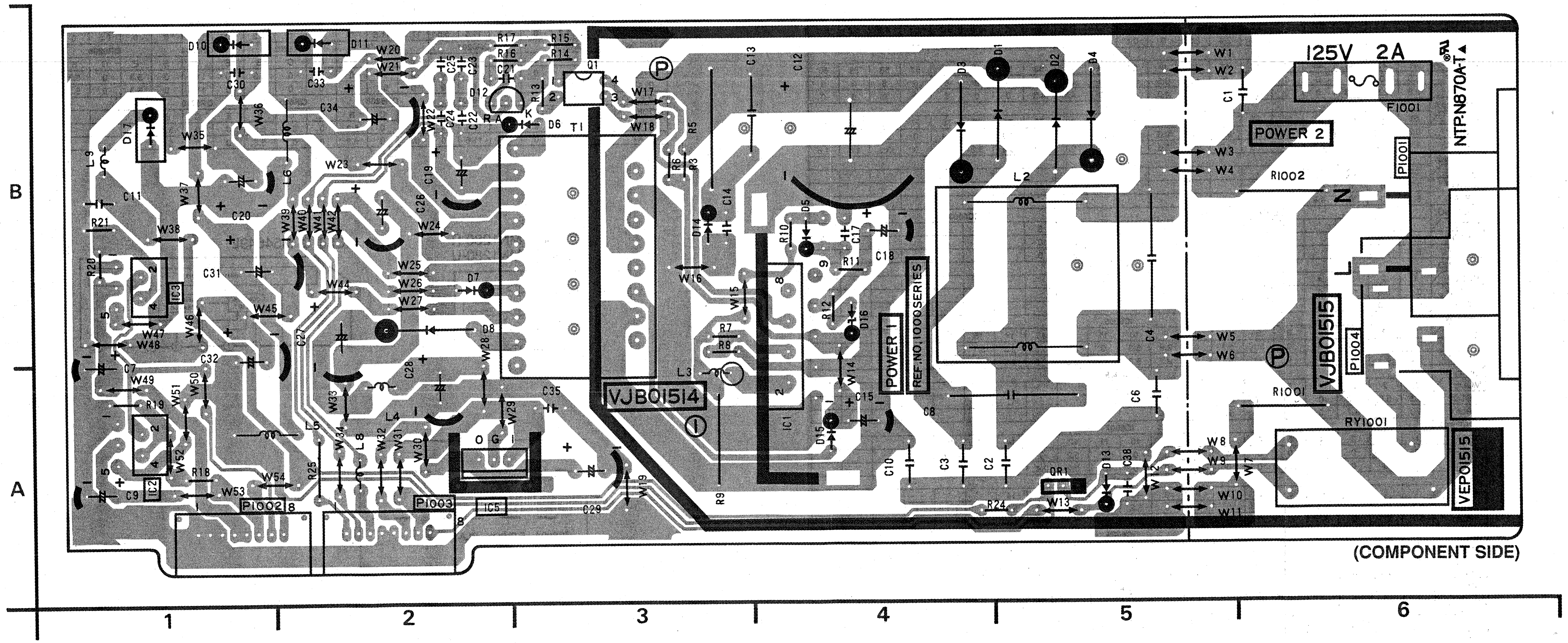
POWER SUPPLY 1 AND 2 C.B.A.		
Transistor		
Q1001	B-3	©
Transistor-Resistor		
QR1001	A-5	©
Integrated Circuits		
IC1001	A-4	©
IC1002	A-1	©
IC1003	B-1	©
IC1005	A-2	©
Connectors		
P1001	B-6	©
P1002	A-1	©
P1003	A-2	©

ADDRESS INFORMATION
© ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

IC1003 SI3050



PROTECTOR
START CIRCUIT
DRIVE
VO
VO
CO
1
2



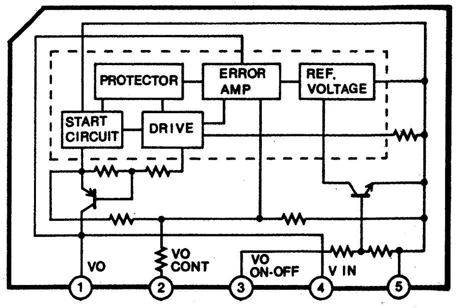
125V 2A
F1001
NTP.N870A-T
POWER 2
POWER 1
REF.NO.1000 SERIES
VJB01514
VJB01515
VEP01515
P1001
P1002
P1003
P1004
IC1
IC2
IC3
IC5
Q1
T1
L2
L3
L4
L5
RY1001
R1001
R1002
QR1
B
A
1
2
3
4
5
6

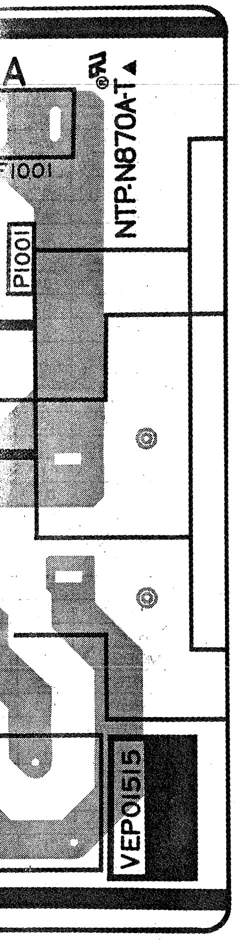
(COMPONENT SIDE)

ER SUPPLY 1 AND 2 A.		
sistor		
001	B-3	©
sistor-Resistor		
1001	A-5	©
rated Circuits		
001 002 003 005	A-4 A-1 B-1 A-2	© © © ©
ectors		
001 002 003	B-6 A-1 A-2	© © ©

SS INFORMATION
COMPONENT SIDE
FOIL SIDE

IC1003 SI3050C

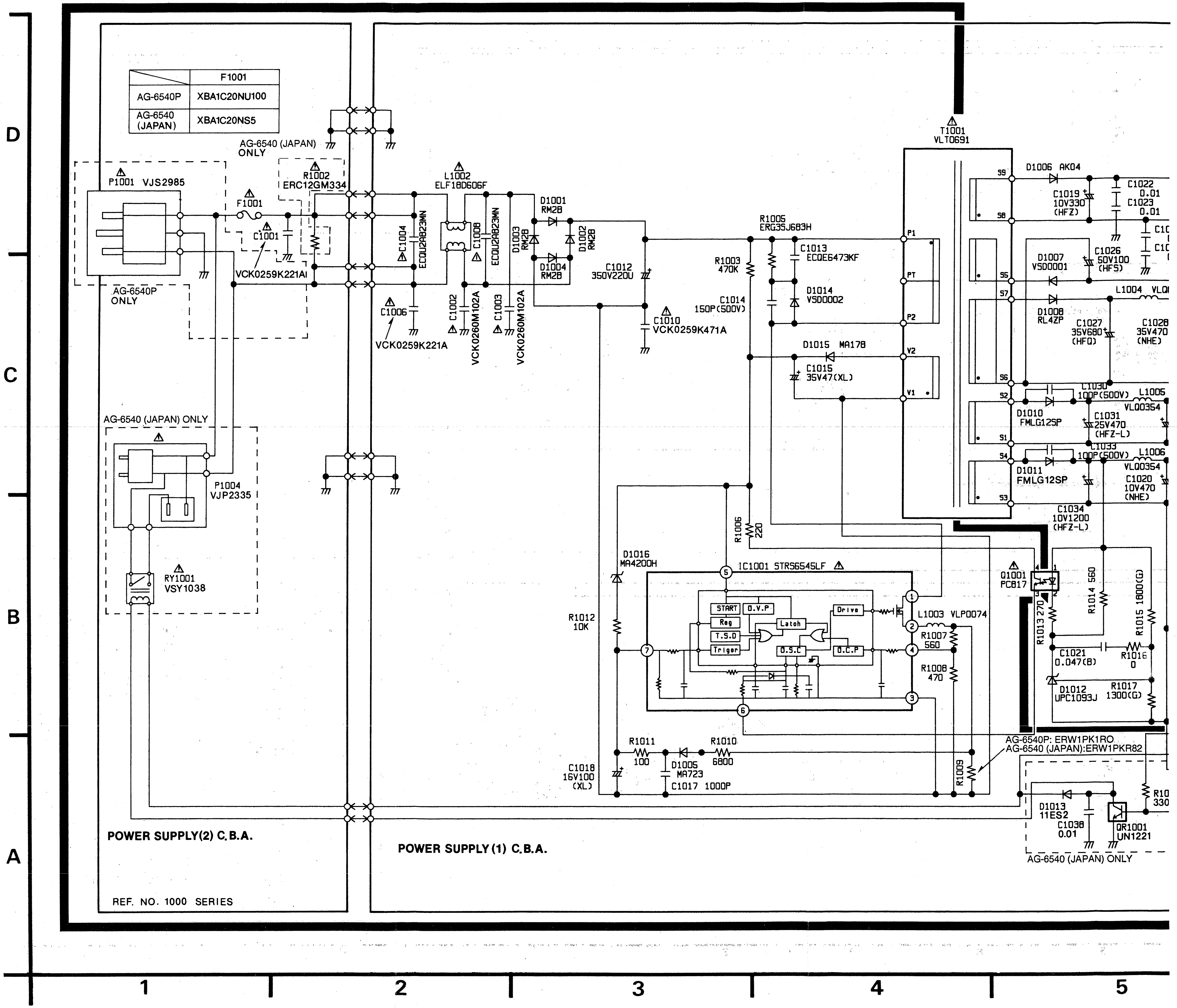

PROTECTOR
ERROR AMP
REF. VOLTAGE
START CIRCUIT
DRIVE
VO
VO CONT
VO ON-OFF
V IN
1
2
3
4
5


A
NTP.N870A-T
F1001
P1001
VEP01515

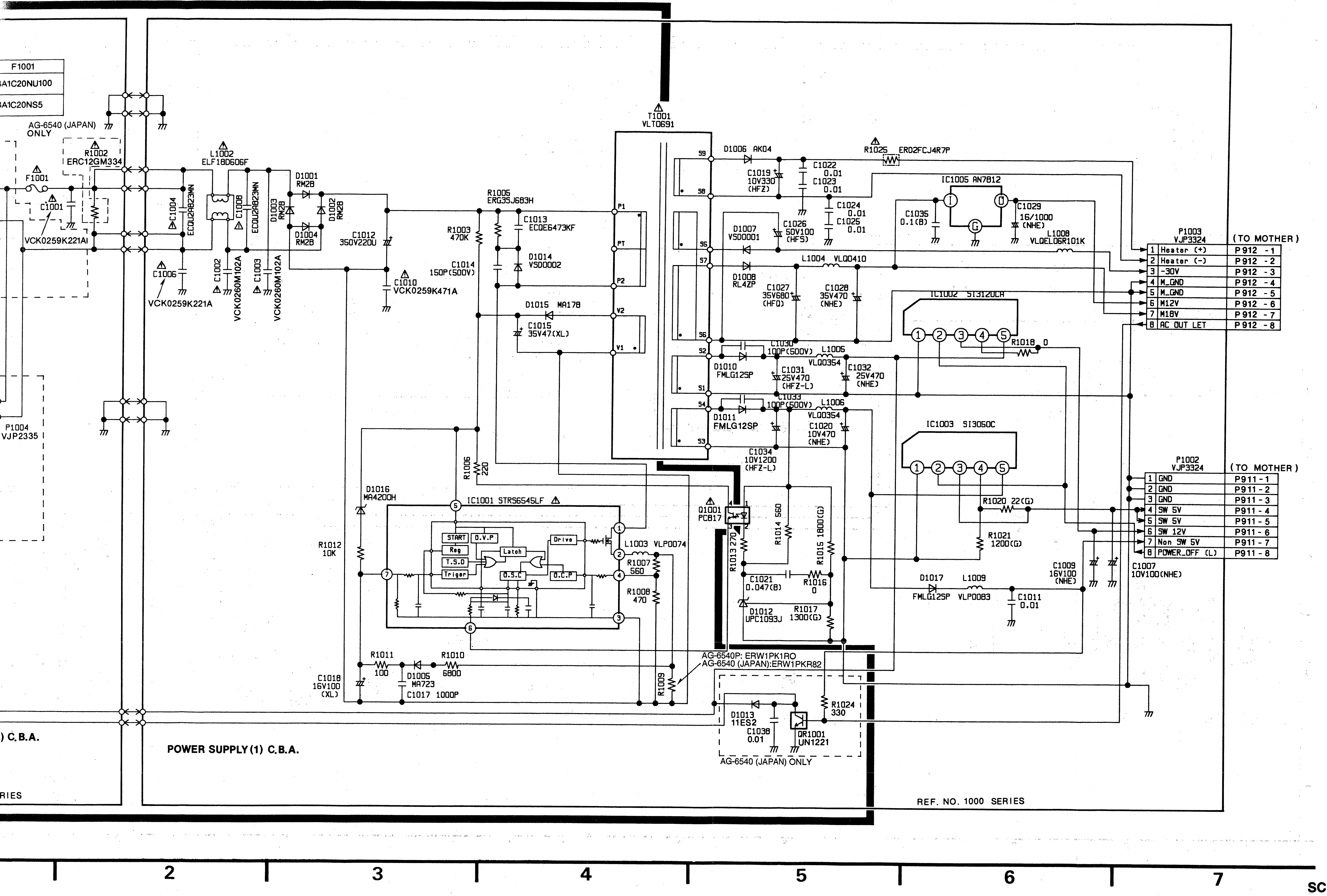
MPONENT SIDE)

POWER SUPPLY 1 (E1) AND POWER SUPPLY 2 (E2) SCHEMATIC DIAGRAM

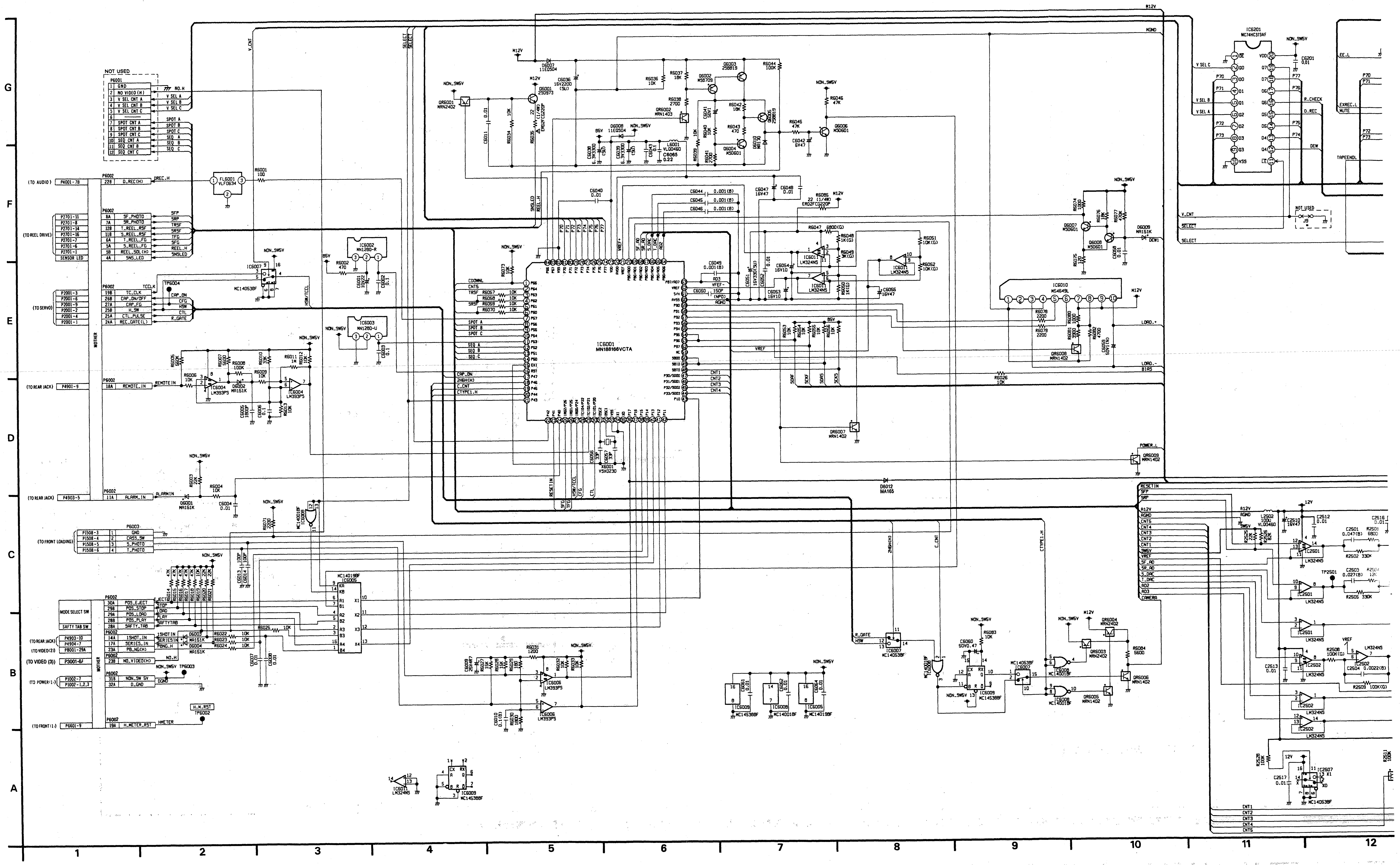
	F1001
AG-6540P	XBA1C20NU100
AG-6540 (JAPAN)	XBA1C20NS5

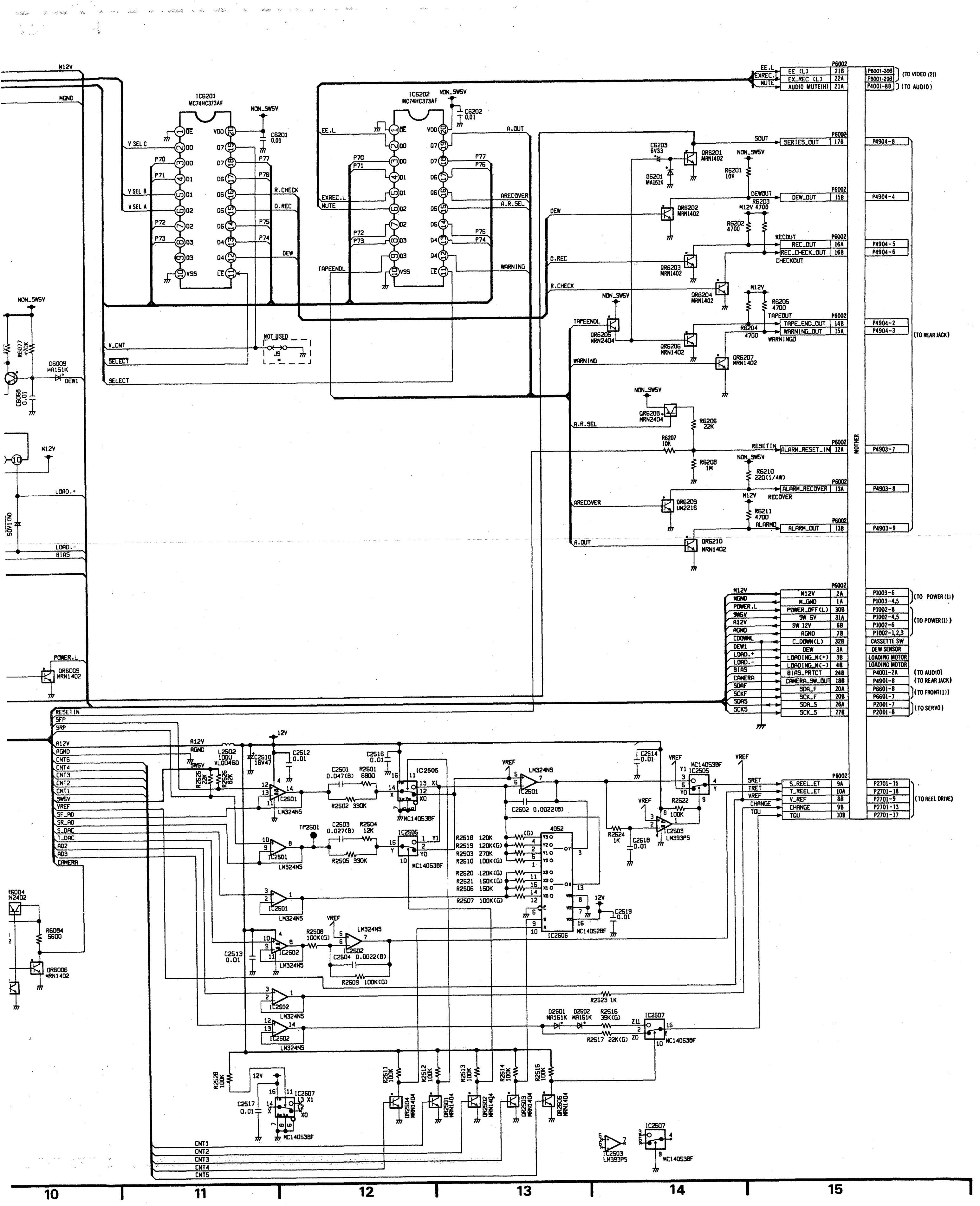

D
C
B
A
1
2
3
4
5
AG-6540 (JAPAN) ONLY
P1001 VJS2985
AG-6540P ONLY
F1001
C1001
VCK0259K221A
R1002 ERC12GM334
C1004 ECQU2A823MN
C1006 VCK0259K221A
L1002 ELF18D606F
C1008 ECQU2A823MN
C1002 VCK0260M102A
C1003 VCK0260M102A
D1001 RM2B
D1002 RM2B
D1003 RM2B
D1004 RM2B
C1012 350V220U
C1010 VCK0259K471A
R1005 ERG3SJ683H
R1003 470K
C1013 ECQE6473KF
C1014 150P(500V)
D1014 VS00002
D1015 MA178
C1015 35V47(XL)
T1001 VLT0691
P1
PT
P2
V2
V1
S9
S8
S5
S7
S6
S2
S1
S4
S3
D1006 AK04
C1019 10V330 (HFZ)
C1022 0.01
C1023 0.01
D1007 VS00001
C1026 50V100 (HFS)
D1008 RL4ZP
C1027 35V680 (HFQ)
C1028 35V470 (NHE)
L1004 VLQ
C1030 100P(500V)
L1005 VLQ0354
D1010 FMLG12SP
C1031 25V470 (HFZ-L)
C1033 100P(500V)
L1006 VLQ0354
D1011 FMLG12SP
C1020 10V470 (NHE)
C1034 10V1200 (HFZ-L)
AG-6540 (JAPAN) ONLY
P1004 VJP2335
RY1001 VSY1038
R1006 220
D1016 MA4200H
IC1001 STR56545LF
START
O.V.P
Reg
T.S.D
Triger
Latch
Drive
O.S.C
O.C.P
R1012 10K
L1003 VLP0074
R1007 560
R1008 470
Q1001 PC817
R1013 270
R1014 560
R1015 1800(G)
C1021 0.047(B)
R1016 0
D1012 UPC1093J
R1017 1300(G)
R1011 100
R1010 6800
D1005 MA723
C1017 1000P
C1018 16V100 (XL)
R1009
AG-6540P: ERW1PK1RO
AG-6540 (JAPAN):ERW1PKR82
D1013 11ES2
C1038 0.01
QR1001 UN1221
R10 330
AG-6540 (JAPAN) ONLY
POWER SUPPLY(2) C.B.A.
POWER SUPPLY (1) C.B.A.
REF. NO. 1000 SERIES

E1) AND POWER SUPPLY 2 (E2) SCHEMATIC DIAGRAM


F1001
A1C20NU100
A1C20NS5
AG-6540 (JAPAN) ONLY
R1002 ERC12GM334
F1001
C1001
VCK0259K221AI
L1002 ELF18D606F
C1004 ECQU2A823MN
C1006 ECQU2A823MN
C1005 VCK0259K221A
C1002 VCK0260M102A
C1003 VCK0260M102A
D1001 RM2B
D1002 RM2B
D1003 RM2B
D1004 RM2B
C1012 350V220U
C1010 VCK0259K471A
R1005 ERG35J683H
R1003 470K
C1013 ECQE6473KF
C1014 150P(500V)
D1014 VS00002
D1015 MA178
C1015 35V47(XL)
T1001 VLT0691
P1
PT
P2
V2
V1
S9
S8
S5
S7
S6
S2
S1
S4
S3
D1006 AK04
C1019 10V330 (HFZ)
C1022 0.01
C1023 0.01
C1024 0.01
C1025 0.01
R1025 ERD2FCJ4R7P
IC1005 AN7812
I
O
G
C1035 0.1(B)
C1029 16/1000 (NHE)
L1008 VLQEL06R101K
D1007 VS00001
C1026 50V100 (HFS)
L1004 VLQ0410
D1008 RL4ZP
C1027 35V680 (HFQ)
C1028 35V470 (NHE)
IC1002 SI3120LH
1 2 3 4 5
R1018 0
C1030 100P(500V)
L1005 VLQ0354
D1010 FMLG12SP
C1031 25V470 (HFZ-L)
C1032 25V470 (NHE)
C1033 100P(500V)
L1006 VLQ0354
D1011 FMLG12SP
C1020 10V470 (NHE)
C1034 10V1200 (HFZ-L)
IC1003 SI3050C
1 2 3 4 5
P1003 VJP3324
(TO MOTHER)
1 Heater (+) P912 -1
2 Heater (-) P912 -2
3 -30V P912 -3
4 M_GND P912 -4
5 M_GND P912 -5
6 M12V P912 -6
7 M18V P912 -7
8 AC OUT LET P912 -8
P1002 VJP3324
(TO MOTHER)
1 GND P911-1
2 GND P911-2
3 GND P911-3
4 SW 5V P911-4
5 SW 5V P911-5
6 SW 12V P911-6
7 Non SW 5V P911-7
8 POWER_OFF (L) P911-8
R1020 22(G)
R1021 1200(G)
C1009 16V100 (NHE)
C1007 10V100(NHE)
D1017 FMLG12SP
L1009 VLP0083
C1011 0.01
Q1001 PC817
R1013 270
R1014 560
R1015 1800(G)
C1021 0.047(B)
R1016 0
D1012 UPC1093J
R1017 1300(G)
R1006 220
D1016 MA4200H
IC1001 STRS6545LF
START
O.V.P.
Reg
Latch
Drive
T.S.D
Triger
O.S.C
O.C.P
L1003 VLP0074
R1007 560
R1008 470
R1012 10K
R1011 100
D1005 MA723
R1010 6800
C1017 1000P
C1018 16V100 (XL)
R1009
AG-6540P: ERW1PK1R0
AG-6540 (JAPAN):ERW1PKR82
D1013 11ES2
C1038 0.01
QR1001 UN1221
R1024 330
AG-6540 (JAPAN) ONLY
P1004 VJP2335
) C.B.A.
RIES
POWER SUPPLY (1) C.B.A.
REF. NO. 1000 SERIES
2
3
4
5
6
7

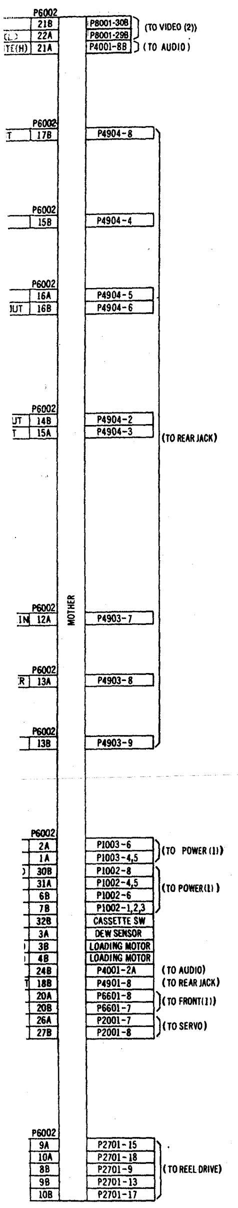
SYSTEM CONTROL SCHEMATIC DIAGRAM (E14)


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
NOT USED
P6001
P6002
MOTHER
(TO AUDIO)
(TO REEL DRIVE)
(TO SERVO)
(TO REAR JACK)
(TO FRONT LOADING)
MODE SELECT SW
SAFTY TAB SW
(TO VIDEO(2))
(TO VIDEO (3))
(TO POWER(1-))
(TO FRONT(1-))
FL6001 VLF0634
IC6001 MN188166VCTA
IC6002 MN1280-R
IC6003 MN1280-U
IC6004 LM393PS
IC6005 MC14019BF
IC6006 LM393PS
IC6007 MC14538F
IC6008 MC14001BF
IC6009 MC14538BF
IC6010 MS4649L
IC6011 LM324NS
IC6201 MC74HC373AF
IC2501 LM324NS
IC2502 LM324NS
X6001 VSX0230
D6012 MA165
M12V
MGND
NON_SW5V
B5V
H.W.RST TP6002
TP6004
TP6003
VREF


IC6201 MC74HC373AF
IC6202 MC74HC373AF
NON_SW5V
M12V
MGND
V SEL C
V SEL B
V SEL A
R.CHECK
D.REC
DEW
EE.L
EXREC.L
MUTE
A.OUT
ARECOVER
A.R.SEL
WARNING
TAPEENDL
QR6201 MRN1402
QR6202 MRN1402
QR6203 MRN1402
QR6204 MRN1402
QR6205 MRN2404
QR6206 MRN1402
QR6207 MRN1402
QR6208 MRN2404
QR6209 UN2216
QR6210 MRN1402
D6201 MA151K
SOUT
SERIES_OUT
DEWOUT
DEW_OUT
RECOUT
REC_OUT
REC_CHECK_OUT
CHECKOUT
TAPEOUT
TAPE_END_OUT
WARNING_OUT
WARNINGO
RESETIN
ALARM_RESET_IN
ALARM_RECOVER
RECOVER
ALARMO
ALARM_OUT
MOTHER
P6002
(TO VIDEO (2))
(TO AUDIO)
(TO REAR JACK)
(TO POWER (1))
(TO POWER(1))
(TO AUDIO)
(TO REAR JACK)
(TO FRONT(1))
(TO SERVO)
(TO REEL DRIVE)
NOT USED
J9
V_CNT
SELECT
D6309 MA151K
DEW1
LOAD.+
LOAD.-
BIAS
POWER_L
QR6009 MRN1402
QR6006 MRN1402
M12V
M_GND
POWER_OFF(L)
SW 5V
SW 12V
AGND
C.DOWN(L)
DEW
LOADING_M(+)
LOADING_M(-)
BIAS_PRTCT
CAMERA_SW_OUT
SDR_F
SCK_F
SDR_S
SCK_S
S_REEL_ET
T_REEL_ET
V_REF
CHANGE
TOU
IC2501 LM324N5
IC2502 LM324N5
IC2503 LM393P5
IC2505 MC14053BF
IC2506 4052 MC14052BF
IC2507 MC14053BF
QR2504 MRN1404
QR2505 MRN1404
QR2501 MRN1404
QR2502 MRN1404
QR2503 MRN1404
D2501 MA151K
D2502 MA151K
CNT1
CNT2
CNT3
CNT4
CNT5
10
11
12
13
14
15

SYSTEM CONTROL ICs DC VOLTAGE CHART

REF. NO.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	2.4	2.4	2.1	11.9	2.4	2.4	2.4	0.6	0.6	0.6	0	0.5	0.5	0.5						
PLAY	2.7	2.7	2.6	11.9	2.4	2.4	2.2	4.9	4.9	4.9	0	2.4	2.5	2.4						
REF. NO.	IC2502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	1.0	1.0	0.9	11.9	2.4	2.4	2.4	2.4	2.4	2.1	0	0.9	1.0	1.0						
PLAY	2.4	2.4	2.1	11.9	2.4	2.4	2.4	2.4	2.4	2.1	0	1.1	1.2	1.2						
REF. NO.	IC2503																			
MODE	1	2	3	4	5	6	7	8												
STOP	10.7	2.4	2.4	0	0	0	0	11.9												
PLAY	10.7	2.2	2.4	0	0	0	0	11.9												
REF. NO.	IC2505																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	2.4	2.4	2.4	2.4	2.4	0	0	0	10.7	0	0	2.4	2.4	2.4	2.4	11.9				
PLAY	2.4	2.4	2.2	2.2	2.4	0	0	0	10.7	0	10.7	2.4	2.4	2.4	2.4	11.9				
REF. NO.	IC2506																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	2.4	2.2	2.4	2.2	1.9	0	0	0	0	0	2.2	2.4	2.4	2.1	2.1	11.9				
PLAY	2.2	2.2	2.2	2.2	1.9	0	0	0	10.7	0	2.4	2.4	2.4	2.4	2.4	11.9				
REF. NO.	IC2507																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	0.9	0	0	0	0	0	0	0	10.7	10.7	0	0	0	0	11.8				
PLAY	0.8	0.1	0	0	0	0	0	0	0	0	10.7	0	0	0	0	11.9				
REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	5.0	0	5.0	0	0	5.1	0	0	0	0	0	0	5.1	0	5.1	5.1	0
PLAY	0	0	0	0	0	0	0	0	5.1	0	5.3	0	0	0	0	5.1	5.1	5.1	5.1	0
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.8	1.4	0	5.2	0.1	5.0	0	4.9	0	0	1.7	2.3	0	0	5.0	5.3	5.3	4.8	5.2	5.3
PLAY	2.7	1.5	0	5.2	2.7	1.5	2.4	2.5	0	0.1	1.7	2.3	0	0	5.0	5.3	5.3	0	5.2	2.5
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.0	0	5.3	0	0	0	0	4.9	0.6	0.6	0	4.8	4.3	0	0	0	0	0	0	0
PLAY	2.8	2.8	5.3	0	0	0	0	4.9	4.8	4.8	0	4.8	4.3	0	0	0	0	0	0	0
REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0.7	1.0	0.9	0.9	2.1	2.1	0.6	0.5	2.6	0.6	3.9	5.1	5.1	3.3	3.3	5.1	0	3.3	1.7	1.7
PLAY	1.1	1.0	2.2	2.1	2.1	2.6	4.9	2.5	2.6	0.6	3.9	5.1	5.1	3.2	3.2	5.1	0	3.2	1.8	1.8
REF. NO.	IC6001																			
MODE	81	82	83	84																
STOP	1.7	0	0	4.5																
PLAY	5.1	0	0	4.4																
REF. NO.	IC6002										IC6003									
MODE	1	2	3								1	2	3							
STOP	5.1	5.1	0								5.3	5.3	0							
PLAY	5.1	5.1	0								5.3	5.3	0							
REF. NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8												
STOP	0.1	3.3	1.2	0	0	1.2	0	5.3												
PLAY	0.1	3.3	1.2	0	0	1.2	0	5.3												
REF. NO.	IC6005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	5.2	5.1	0.2	0	0	5.1	5.1	0	2.8	5.3	0	3.0	5.3	2.3	5.1	5.3				
PLAY	5.2	5.1	0.2	5.1	0	5.1	5.1	0	2.7	5.3	2.8	2.8	2.5	2.5	0	5.3				
REF. NO.	IC6006																			
MODE	1	2	3	4	5	6	7	8												
STOP	5.3	3.0	3.2	0	3.2	3.0	5.3	5.3												
PLAY	5.3	3.0	3.2	0	3.2	3.0	5.3	5.3												
REF. NO.	IC6007																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	0	0	0	0	0	0	0	0	0	5.1	0.2	0	0	0	5.3				
PLAY	0	0	0	2.4	2.4	0	0	0	0	0	5.1	0.2	2.4	2.4	0	5.3				
REF. NO.	IC6008																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	5.1	0	0	5.5	0	0	0	0	0	5.2	2.3	2.8	2.8	5.3						
PLAY	5.1	2.4	0	5.5	0	0	0	0	0	5.2	2.5	2.7	2.7	5.3						
REF. NO.	IC6009																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	5.3	0	0	0	0	5.3	0	5.3	0	0	0	5.3	5.3	0	5.3				
PLAY	0	5.3	0	0	0	0	5.3	0	5.3	0	0	0	5.3	5.3	0	5.3				
REF. NO.	IC6010																			
MODE	1	2	3	4	5	6	7	8	9	10										
STOP	0	0.2	0.2	0	0	0	11.7	9.6	11.7	0.2										
PLAY	0	0.2	0.2	0	0	0	11.7	9.6	11.7	0.2										
REF. NO.	IC6011																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	3.9	3.9	3.9	11.7	1.0	1.0	1.0	2.4	2.4	2.4	0	0	0	10.4						
PLAY	3.9	3.9	3.9	11.6	1.0	1.0	1.0	2.4	2.4	2.4	0	0	0	10.4						


P6002
21B
22A
21A
P8001-30B
P8001-29B
P4001-8B
(TO VIDEO (2))
(TO AUDIO)
17B
P4904-8
15B
P4904-4
16A
16B
P4904-5
P4904-6
14B
15A
P4904-2
P4904-3
(TO REAR JACK)
MOTHER
12A
P4903-7
13A
P4903-8
13B
P4903-9
2A
1A
30B
31A
6B
7B
32B
3A
3B
4B
24B
18B
20A
20B
26A
27B
P1003-6
P1003-4,5
P1002-8
P1002-4,5
P1002-6
P1002-1,2,3
CASSETTE SW
DEW SENSOR
LOADING MOTOR
LOADING MOTOR
P4001-2A
P4901-8
P6601-8
P6601-7
P2001-7
P2001-8
(TO POWER (1))
(TO POWER(1))
(TO AUDIO)
(TO REAR JACK)
(TO FRONT(1))
(TO SERVO)
9A
10A
8B
9B
10B
P2701-15
P2701-18
P2701-9
P2701-13
P2701-17
(TO REEL DRIVE)

SYSTEM CONTROL ICs DC VOLTAGE CHART

REF. NO.	IC2501													
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
STOP	2.4	2.4	2.1	11.9	2.4	2.4	2.4	0.6	0.6	0.6	0	0.5	0.5	0.5
PLAY	2.7	2.7	2.6	11.9	2.4	2.4	2.2	4.9	4.9	4.9	0	2.4	2.5	2.4

REF. NO.	IC2502													
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
STOP	1.0	1.0	0.9	11.9	2.4	2.4	2.4	2.4	2.4	2.1	0	0.9	1.0	1.0
PLAY	2.4	2.4	2.1	11.9	2.4	2.4	2.4	2.4	2.4	2.1	0	1.1	1.2	1.2

REF. NO.	IC2503							
MODE	1	2	3	4	5	6	7	8
STOP	10.7	2.4	2.4	0	0	0	0	11.9
PLAY	10.7	2.2	2.4	0	0	0	0	11.9

REF. NO.	IC2505															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	2.4	2.4	2.4	2.4	2.4	0	0	0	10.7	0	0	2.4	2.4	2.4	2.4	11.9
PLAY	2.4	2.4	2.2	2.2	2.4	0	0	0	10.7	0	10.7	2.4	2.4	2.4	2.4	11.9

REF. NO.	IC2506															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	2.4	2.2	2.4	2.2	1.9	0	0	0	0	0	2.2	2.4	2.4	2.1	2.1	11.9
PLAY	2.2	2.2	2.2	2.2	1.9	0	0	0	10.7	0	2.4	2.4	2.4	2.4	2.4	11.9

REF. NO.	IC2507															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	0	0.9	0	0	0	0	0	0	0	10.7	10.7	0	0	0	0	11.8
PLAY	0.8	0.1	0	0	0	0	0	0	0	0	10.7	0	0	0	0	11.9

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	0	5.0	0	5.0	0	0	5.1	0	0	0	0	0	0	5.1	0	5.1	5.1	0
PLAY	0	0	0	0	0	0	0	0	5.1	0	5.3	0	0	0	0	5.1	5.1	5.1	5.1	0

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	2.8	1.4	0	5.2	0.1	5.0	0	4.9	0	0	1.7	2.3	0	0	5.0	5.3	5.3	4.8	5.2	5.3
PLAY	2.7	1.5	0	5.2	2.7	1.5	2.4	2.5	0	0.1	1.7	2.3	0	0	5.0	5.3	5.3	0	5.2	2.5

REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	3.0	0	5.3	0	0	0	0	4.9	0.6	0.6	0	4.8	4.3	0	0	0	0	0	0	0
PLAY	2.8	2.8	5.3	0	0	0	0	4.9	4.8	4.8	0	4.8	4.3	0	0	0	0	0	0	0

REF. NO.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	0.7	1.0	0.9	0.9	2.1	2.1	0.6	0.5	2.6	0.6	3.9	5.1	5.1	3.3	3.3	5.1	0	3.3	1.7	1.7
PLAY	1.1	1.0	2.2	2.1	2.1	2.6	4.9	2.5	2.6	0.6	3.9	5.1	5.1	3.2	3.2	5.1	0	3.2	1.8	1.8

REF. NO.	IC6001			
MODE	81	82	83	84
STOP	1.7	0	0	4.5
PLAY	5.1	0	0	4.4

REF. NO.	IC6002			IC6003		
MODE	1	2	3	1	2	3
STOP	5.1	5.1	0	5.3	5.3	0
PLAY	5.1	5.1	0	5.3	5.3	0

REF. NO.	IC6004							
MODE	1	2	3	4	5	6	7	8
STOP	0.1	3.3	1.2	0	0	1.2	0	5.3
PLAY	0.1	3.3	1.2	0	0	1.2	0	5.3

REF. NO.	IC6005															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	5.2	5.1	0.2	0	0	5.1	5.1	0	2.8	5.3	0	3.0	5.3	2.3	5.1	5.3
PLAY	5.2	5.1	0.2	5.1	0	5.1	5.1	0	2.7	5.3	2.8	2.8	2.5	2.5	0	5.3

REF. NO.	IC6006							
MODE	1	2	3	4	5	6	7	8
STOP	5.3	3.0	3.2	0	3.2	3.0	5.3	5.3
PLAY	5.3	3.0	3.2	0	3.2	3.0	5.3	5.3

REF. NO.	IC6007															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	0	0	0	0	0	0	0	0	0	0	5.1	0.2	0	0	0	5.3
PLAY	0	0	0	2.4	2.4	0	0	0	0	0	5.1	0.2	2.4	2.4	0	5.3

REF. NO.	IC6008													
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
STOP	5.1	0	0	5.5	0	0	0	0	0	5.2	2.3	2.8	2.8	5.3
PLAY	5.1	2.4	0	5.5	0	0	0	0	0	5.2	2.5	2.7	2.7	5.3

REF. NO.	IC6009															
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
STOP	0	5.3	0	0	0	0	5.3	0	5.3	0	0	0	5.3	5.3	0	5.3
PLAY	0	5.3	0	0	0	0	5.3	0	5.3	0	0	0	5.3	5.3	0	5.3

REF. NO.	IC6010									
MODE	1	2	3	4	5	6	7	8	9	10
STOP	0	0.2	0.2	0	0	0	11.7	9.6	11.7	0.2
PLAY	0	0.2	0.2	0	0	0	11.7	9.6	11.7	0.2

REF. NO.	IC6011													
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
STOP	3.9	3.9	3.9	11.7	1.0	1.0	1.0	2.4	2.4	2.4	0	0	0	10.4
PLAY	3.9	3.9	3.9	11.6	1.0	1.0	1.0	2.4	2.4	2.4	0	0	0	10.4

SYSTEM CONTROL ICs DC VOLTAGE CHART

REF. NO.	IC6201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	5.3	1.7	1.7	5.3	5.3	1.7	3.3	0	0	1.4	0	0	5.1	5.3	0	3.3	3.3	0	5.3
PLAY	0	5.3	5.1	1.8	5.3	5.3	1.8	3.2	0	0	1.5	0	0	5.1	5.3	0	3.2	3.2	0	5.3

REF. NO.	IC6202																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	1.7	1.7	0	0	1.7	3.3	5.3	0	2.8	0	0	5.1	5.3	5.3	3.3	3.3	5.3	5.3
PLAY	0	5.3	5.1	1.8	0	0	1.8	3.2	5.3	0	2.7	0	0	5.1	5.3	5.3	3.2	3.2	5.3	5.3

SYSTEM CONTROL TRs DC VOLTAGE CHART

REF. NO.	Q6001			Q6002			Q6003			Q6004			Q6005			Q6006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0.6	11.7	0.7	10.9	0	11.3	11.5	0	10.9	0	0	0	0	0	0	0	5.1	0
PLAY	0.7	11.7	0.7	10.9	0	11.3	11.5	0	10.9	0	0	0	0	0	0	0	5.1	0

REF. NO.	Q6007			Q6008		
MODE	E	C	B	E	C	B
STOP	0.6	0.6	1.2	0.6	1.2	0.4
PLAY	0.6	0.6	1.2	0.6	1.2	0.4

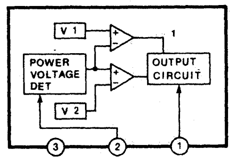
REF. NO.	QR2501			QR2502			QR2503			QR2504			QR2505			QR6001		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	5.0	0	0	5.0	0	0	5.3	0	0	5.0	0	10.7	0	5.3	0.7	4.5
PLAY	0	10.7	0	0	0	5.1	0	10.7	0	0	0	5.1	0	0	5.1	5.3	0.7	4.4

REF. NO.	QR6002			QR6003			QR6004			QR6005			QR6006			QR6008		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	11.2	0	5.3	11.6	5.5	11.7	11.6	0	0	0	5.2	0	11.6	0	0	9.5	0
PLAY	0	11.2	0	5.3	11.6	5.5	11.7	11.6	0	0	0	5.2	0	11.6	0	0	9.5	0

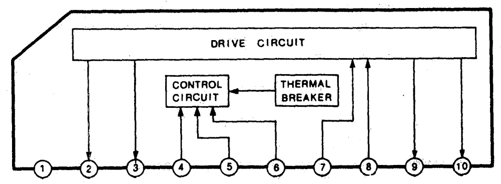
REF. NO.	QR6009			QR6201			QR6202			QR6203			QR6204			QR6205		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	2.4	0	0	0	0	0	5.3	0	0	0	5.3	0	11.6	0	5.3	0	5.3
PLAY	0	2.4	0	0	0	0	0	5.3	0	0	0	5.3	0	11.6	0	5.3	0	5.3

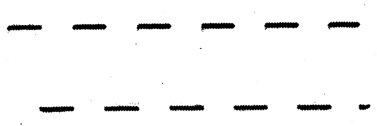
REF. NO.	QR6206			QR6207			QR6208			QR6209			QR6210		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	11.6	0	0	11.6	0	5.3	0	5.3	0	0.1	5.3	0	0	5.3
PLAY	0	11.6	0	0	11.6	0	5.3	0	5.3	0	0.1	5.3	0	0	5.3

IC6002 MN1280-R
IC6003 MN1280-U


V 1
V 2
POWER
VOLTAGE
DET
OUTPUT
CIRCUIT
1
③
②
①

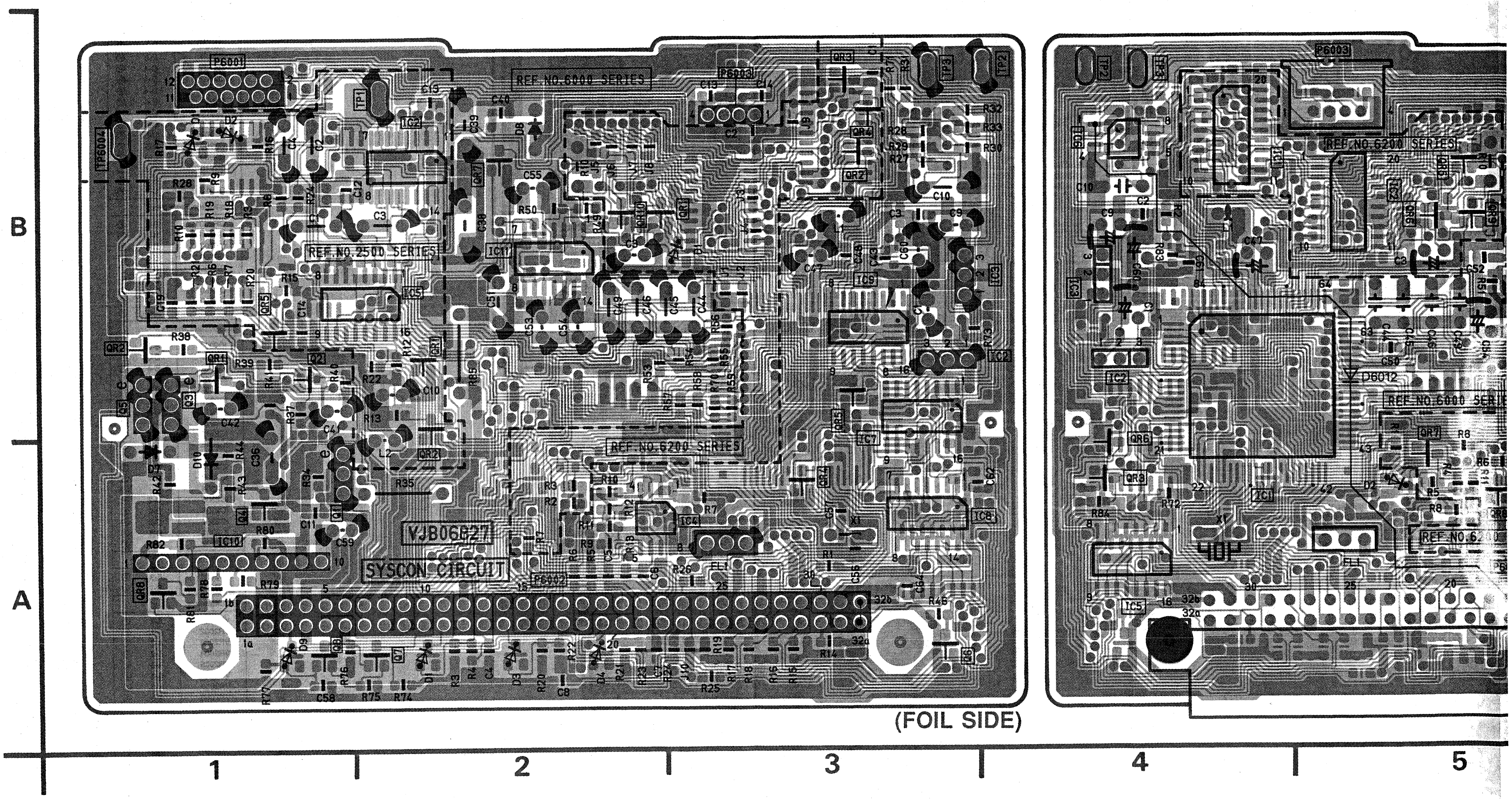
IC6010 M54649L


DRIVE CIRCUIT
CONTROL
CIRCUIT
THERMAL
BREAKER
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩



TP6004 5.0Vp-p PLAY

SYSTEM CONTROL C.B.A. (E14)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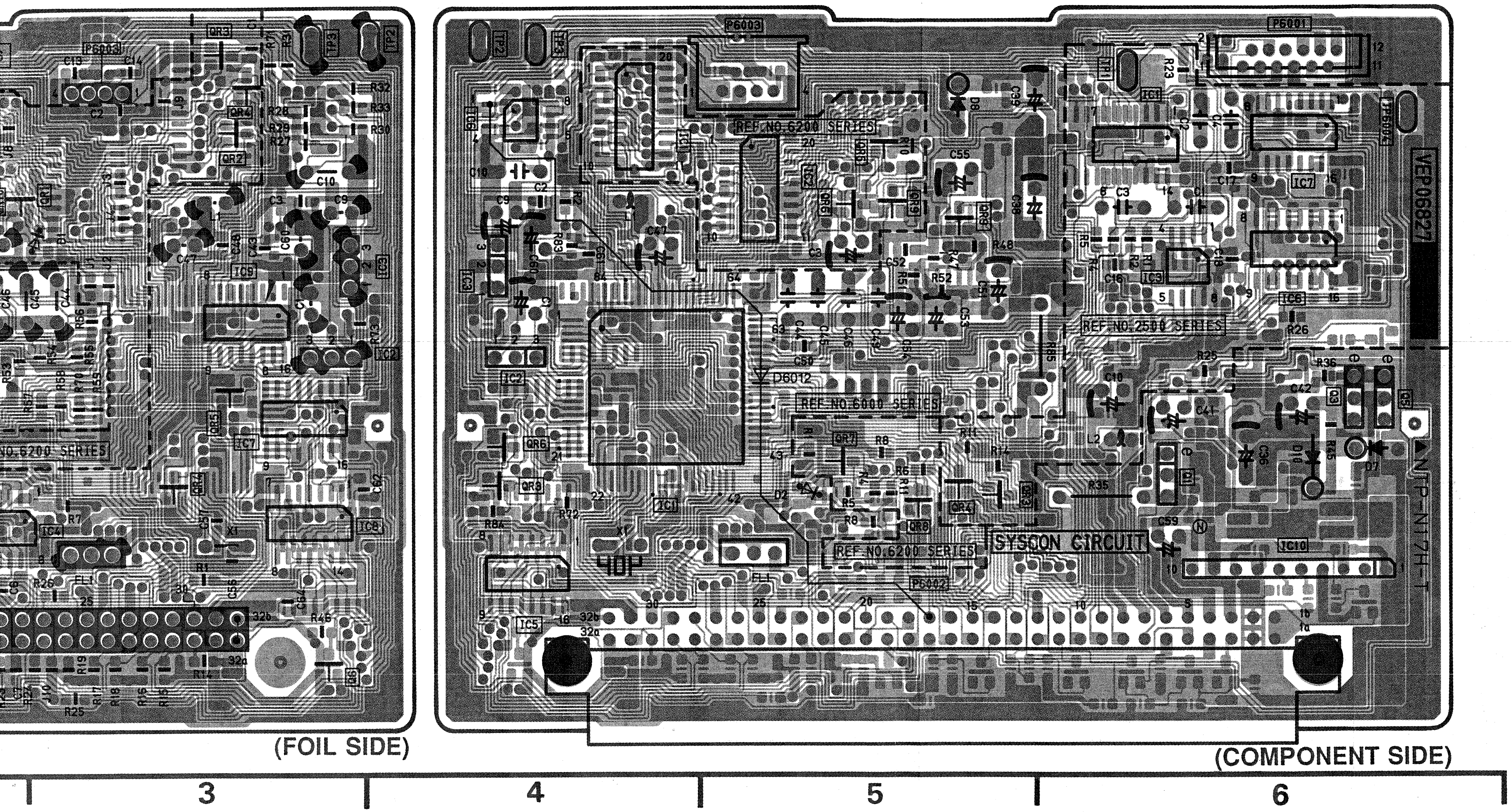
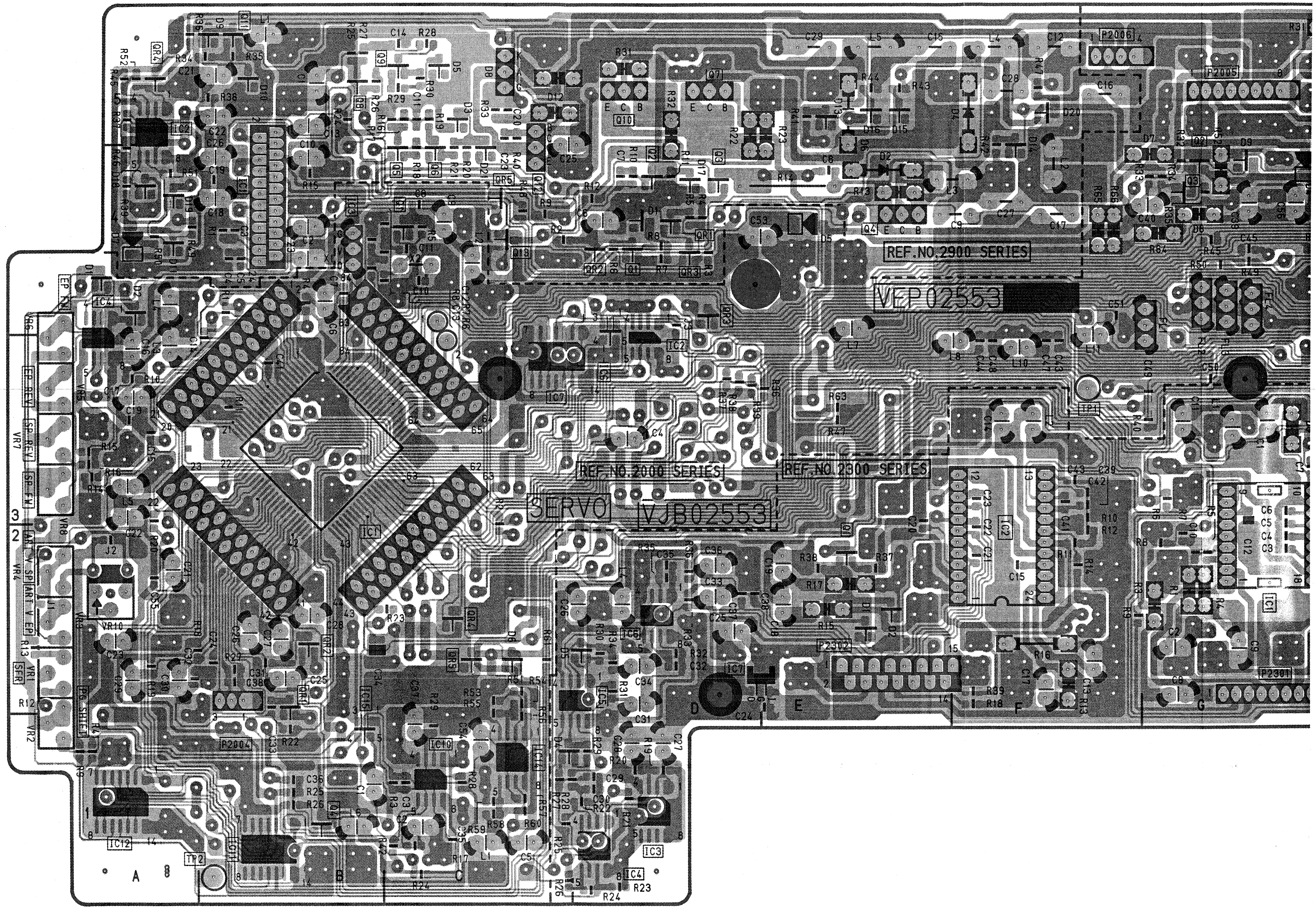
REF.NO.2500 SERIES
REF.NO.6200 SERIES
VJB06827
SYSCON CIRCUIT
P6001
P6002
P6003
TP6004
TP1
TP2
TP3
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
X1
FL1
D6012
(FOIL SIDE)
B
A
1
2
3
4
5

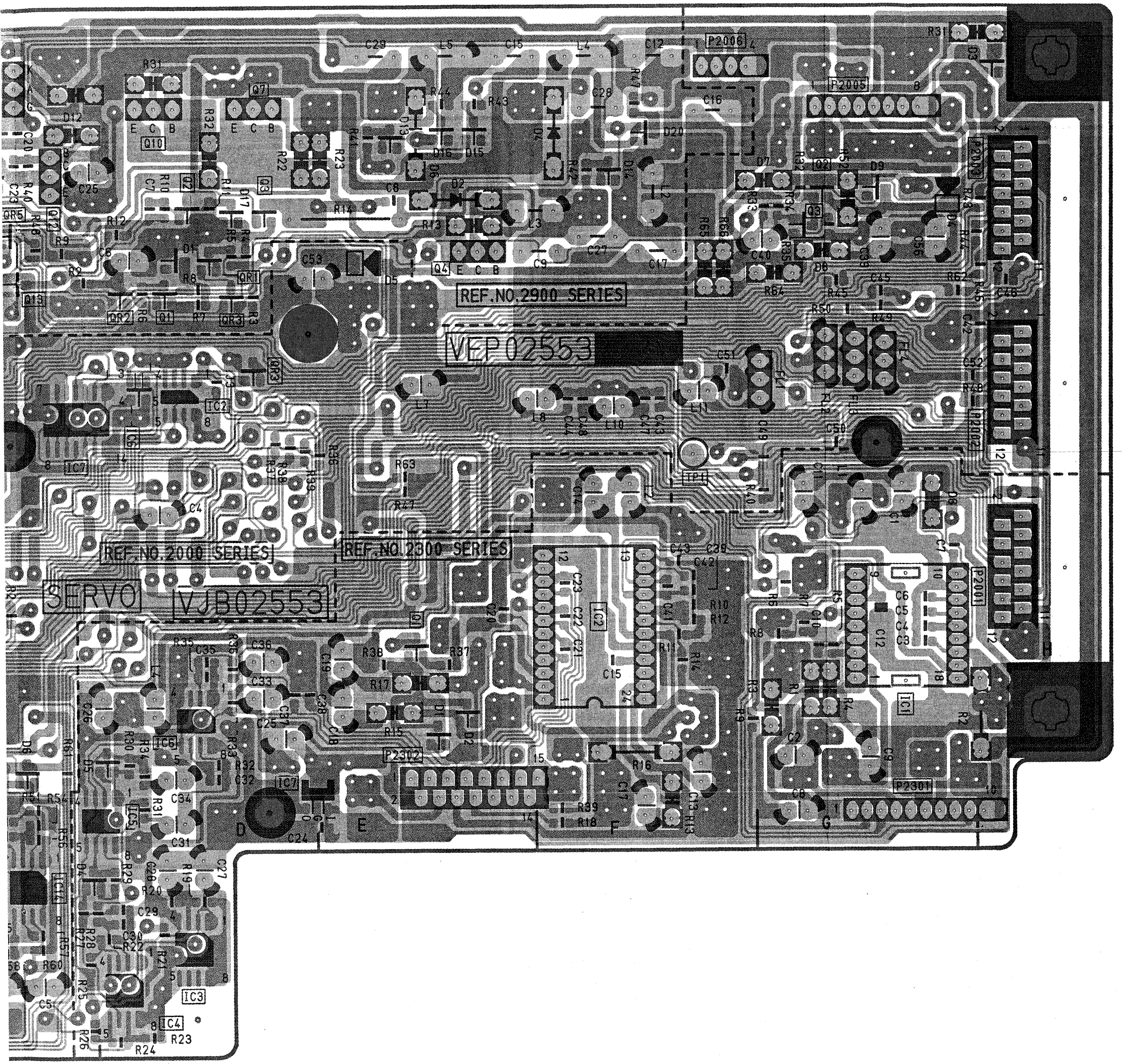

(FOIL SIDE)
(COMPONENT SIDE)
SYSCON CIRCUIT
VEP06827
REF.NO.6200 SERIES
REF.NO.6000 SERIES
REF.NO.2500 SERIES
P6001
P6002
P6003
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
TP2
TP3
TP6004
NTP-N17H-T
3
4
5
6

SYSTEM CONTROL C.B.A.	
Transistors	
Q6001	A-1/A-6 Ⓕ/Ⓒ
Q6002	B-1 Ⓕ
Q6003	B-1/B-6 Ⓕ/Ⓒ
Q6004	A-1 Ⓕ
Q6005	B-1/B-6 Ⓕ/Ⓒ
Q6006	A-3 Ⓕ
Q6007	A-2 Ⓕ
Q6008	A-1 Ⓕ
Transistor-Resistors	
QR2501	
QR2502	B-2 Ⓕ
QR2503	A-5 Ⓒ
QR2504	A-5 Ⓒ
QR2505	
QR6001	B-1 Ⓕ
QR6002	B-1 Ⓕ
QR6003	A-4 Ⓒ
QR6004	A-3 Ⓕ
QR6005	B-3 Ⓕ
QR6006	B-4 Ⓒ
QR6007	B-2 Ⓕ
QR6008	A-1 Ⓕ
QR6009	B-5 Ⓒ
QR6201	B-2 Ⓕ
QR6202	B-3 Ⓕ
QR6203	B-3 Ⓕ
QR6204	B-3 Ⓕ
QR6205	B-5 Ⓒ
QR6206	B-5 Ⓒ
QR6207	A-5 Ⓒ
QR6208	A-5 Ⓒ
QR6209	B-5 Ⓒ
QR6210	B-2 Ⓕ
Integrated Circuits	
IC2501	B-6 Ⓒ
IC2502	B-2 Ⓕ
IC2503	B-6 Ⓒ
IC2505	B-2 Ⓕ
IC2506	B-6 Ⓒ
IC2507	B-6 Ⓒ
IC6001	B-4 Ⓒ
IC6002	B-3/B-4 Ⓕ/Ⓒ
IC6003	B-3/B-4 Ⓕ/Ⓒ
IC6004	A-2 Ⓕ
IC6005	A-4 Ⓒ
IC6006	B-4 Ⓒ
IC6007	B-3 Ⓕ
IC6008	A-3 Ⓕ
IC6009	B-3 Ⓕ
IC6010	A-1/A-6 Ⓕ/Ⓒ
IC6011	B-2 Ⓕ
IC6201	B-4 Ⓒ
IC6202	B-5 Ⓒ
Test Points	
TP2501	B-2/B-6 Ⓕ/Ⓒ
TP6002	B-3/B-4 Ⓕ/Ⓒ
TP6003	B-3/B-4 Ⓕ/Ⓒ
TP6004	B-1/B-6 Ⓕ/Ⓒ
Connectors	
P6002	A-2/B-5 Ⓕ/Ⓒ
P6003	B-3/B-5 Ⓕ/Ⓒ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

SERVO C.B.A. (E5)

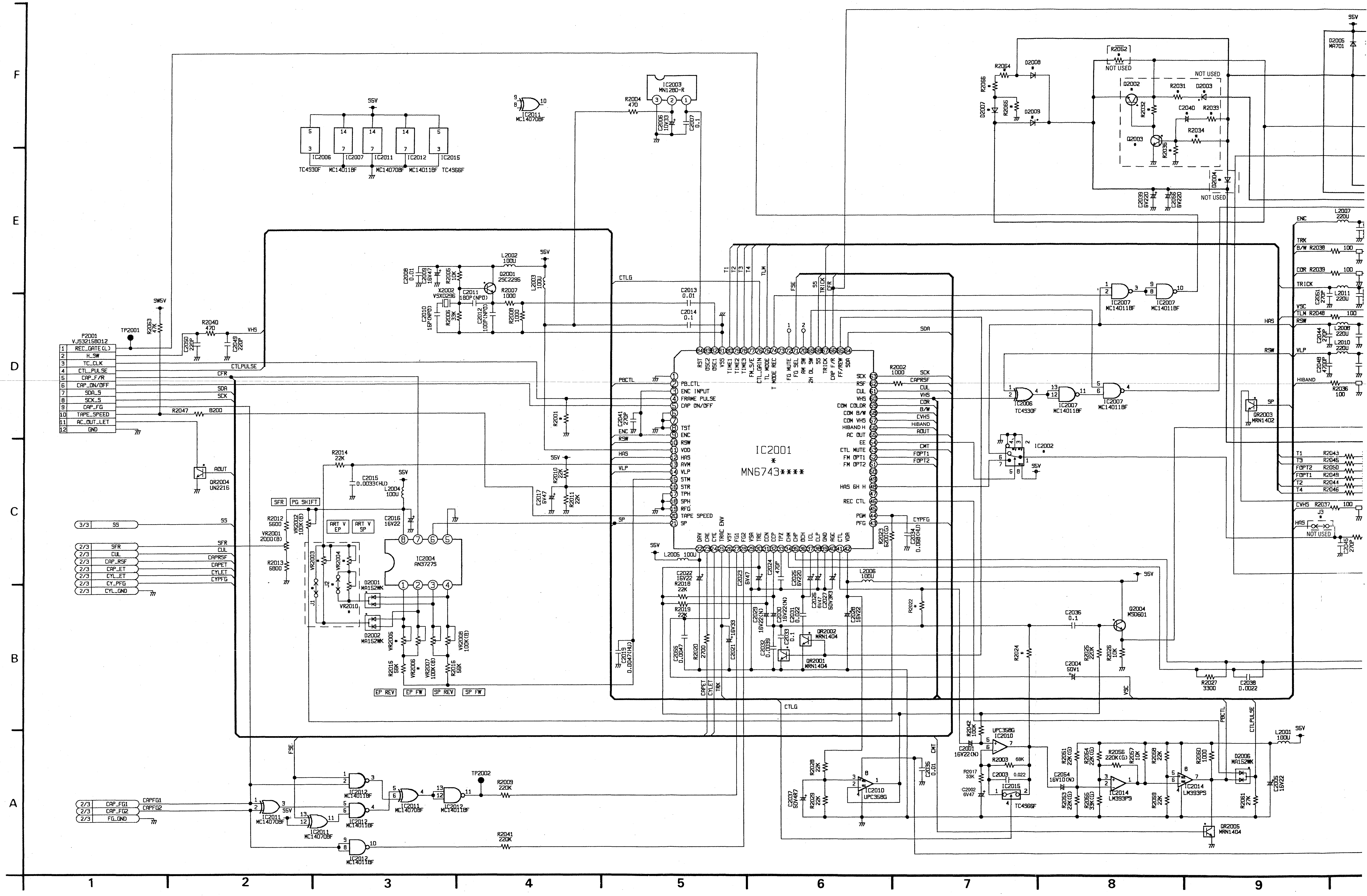

REF.NO.2900 SERIES
VEP02553
REF.NO.2000 SERIES
REF.NO.2300 SERIES
SERVO
VJB02553
EP FIN
FP REV
SP REV
SP FW
ART V SP
ART V EP
SFR
FP SHIFT
A
B
C
D
E
F
G


REF.NO.2900 SERIES
VEP02553
REF.NO.2000 SERIES
REF.NO.2300 SERIES
SERVO
VJB02553
P2001
P2002
P2003
P2005
P2006
P2301
P2302
TP1
D
E
F
G
H

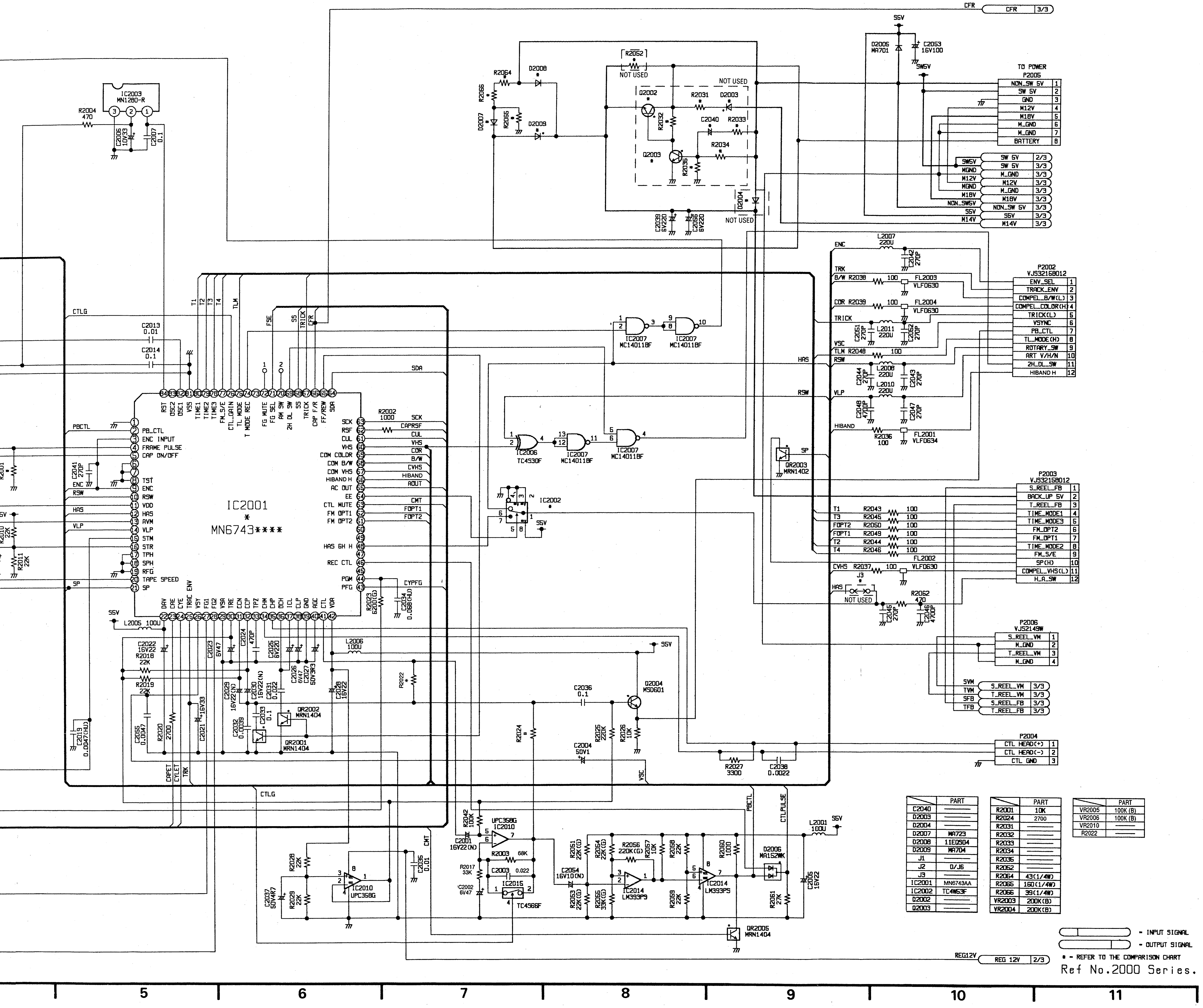
SERVO C.B.A.		
Transistors		
Q2001	C-4	Ⓕ
Q2004	B-1	Ⓕ
Q2301	E-2	Ⓕ
Q2901	D-4	Ⓕ
Q2902	D-4	Ⓕ
Q2903	D-4	Ⓕ
Q2904	E-4	Ⓕ
Q2905	C-4	Ⓕ
Q2906	C-4	Ⓕ
Q2907	D-5	Ⓕ
Q2908	B-5	Ⓕ
Q2909	C-5	Ⓕ
Q2910	D-5	Ⓕ
Q2911	B-5	Ⓕ
Q2912	C-4	Ⓕ
Transistor-Resistors		
QR2001	B-2	Ⓕ
QR2002	B-2	Ⓕ
QR2003	D-4	Ⓕ
QR2004	C-2	Ⓕ
QR2005	C-2	Ⓕ
QR2901	D-4	Ⓕ
QR2902	D-4	Ⓕ
QR2903	D-4	Ⓕ
QR2904	A-5	Ⓕ
Integrated Circuits		
IC2001	B-3	Ⓕ
IC2002	D-3	Ⓕ
IC2003	B-4	Ⓕ
IC2004	A-4	Ⓕ
IC2007	C-3	Ⓕ
IC2010	C-1	Ⓕ
IC2011	B-1	Ⓕ
IC2012	A-1	Ⓕ
IC2014	C-1	Ⓕ
IC2015	B-1	Ⓕ
IC2301	G-2	Ⓕ
IC2302	F-2	Ⓕ
IC2303	D-1	Ⓕ
IC2304	D-1	Ⓕ
IC2305	D-2	Ⓕ
IC2306	D-2	Ⓕ
IC2307	D-2	Ⓕ
IC2901	B-4	Ⓕ
IC2902	A-5	Ⓕ
Test Points		
TP2001	F-3	Ⓕ
TP2002	B-1	Ⓕ
Adjustments		
VR2001	A-2	Ⓕ
VR2002	A-1	Ⓕ
VR2003	A-2	Ⓕ
VR2004	A-2	Ⓕ
VR2005	A-3	Ⓕ
VR2006	A-4	Ⓕ
VR2007	A-3	Ⓕ
VR2008	A-3	Ⓕ
Connectors		
P2001	H-3	Ⓕ
P2002	H-3	Ⓕ
P2003	H-4	Ⓕ
P2004	B-2	Ⓕ
P2005	G-5	Ⓕ
P2006	F-5	Ⓕ
P2301	G-2	Ⓕ
P2302	E-2	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

SERVO SECTION SCHEMATIC DIAGRAM (E5)



F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
IC2001
MN6743****
IC2002
IC2003
MN1280-R
IC2004
AN3727S
IC2006
TC4S30F
IC2007
MC14011BF
IC2011
MC14070BF
IC2012
MC14011BF
IC2015
TC4S66F
IC2010
UPC358G
IC2014
LM393PS
Q2001
2SC2295
Q2004
MSD601
QR2001
MRN1404
QR2002
MRN1404
QR2003
MRN1402
QR2004
UN2216
QR2005
MRN1404
D2001
MA152WK
D2002
MA152WK
D2006
MA152WK
D2005
MA701
NOT USED
P2001
VJS3215B012
REC_GATE(L)
H_SW
TC_CLK
CTL_PULSE
CAP_F/R
CAP_ON/OFF
SDA_S
SCK_S
CAP_FG
TAPE_SPEED
AC_OUT_LET
GND
TP2001
TP2002
S5V
SW5V
3/3
2/3
SS
SFR
CUL
CAP_RSF
CAP_ET
CYL_ET
CYL_PFG
CYL_GND
CAP_FG1
CAP_FG2
FG_GND
CAPFG1
CAPFG2
SFR
PG SHIFT
ART V EP
ART V SP
EP REV
EP FW
SP REV
SP FW
VHS
CTLG
CTLPULSE
CFR
SDA
SCK
PBCTL
ENC
RSW
HAS
VLP
SP
AOUT
FSE
CMT
VSC
TRK
TRICK
HIBAND
CAPET
CYLET
CYPFG
CAPRSF
COR
CVHS
FOPT1
FOPT2
T1
T2
T3
T4
TLM
B/W
PB_CTL
ENC INPUT
FRAME PULSE
CAP ON/OFF
TST
VDD
RVM
STM
STR
TPH
SPH
RFG
TAPE SPEED
COM COLOR
COM B/W
COM VHS
HIBAND H
AC OUT
EE
CTL MUTE
FM OPT1
FM OPT2
HAS GH H
REC CTL
PGM
PFG
X2002
VSX0296
L2001 100U
L2002 100U
L2003 100U
L2004 100U
L2005 100U
L2006 100U
L2007 220U
L2008 220U
L2010 220U
L2011 220U


IC2001
MN6743****
IC2003
MN1280-R
IC2007
MC14011BF
IC2006
TC4S30F
IC2002
IC2010
UPC358G
IC2014
LM393PS
IC2015
TC4S66F
TO POWER
P2005
NON_SW 5V
SW 5V
GND
M12V
M18V
M_GND
M_GND
BATTERY
P2002
VJS3216B012
ENV_SEL
TRACK_ENV
COMPEL_B/W(L)
COMPEL_COLOR(H)
TRICK(L)
VSYNC
PB_CTL
TL_MODE(H)
ROTARY_SW
ART V/H/N
2H_DL_SW
HIBAND H
P2003
VJS3216B012
S_REEL_FB
BACK_UP 5V
T_REEL_FB
TIME_MODE1
TIME_MODE3
FM_OPT2
FM_OPT1
TIME_MODE2
FM_S/E
SP(H)
COMPEL_VHS(L)
H_A_SW
P2006
VJS2149W
S_REEL_VM
M_GND
T_REEL_VM
M_GND
P2004
CTL HEAD(+)
CTL HEAD(-)
CTL GND
CFR
REG 12V
5
6
7
8
9
10
11

	PART
C2040	———
D2003	———
D2004	———
D2007	MA723
D2008	11EQS04
D2009	MA704
J1	———
J2	0/J6
J3	———
IC2001	MN6743AA
IC2002	TC4W53F
Q2002	———
Q2003	———

	PART
R2001	10K
R2024	2700
R2031	———
R2032	———
R2033	———
R2034	———
R2035	———
R2052	———
R2064	43(1/4W)
R2065	160(1/4W)
R2066	39(1/4W)
VR2003	200K(B)
VR2004	200K(B)

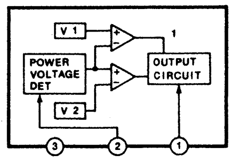
	PART
VR2005	100K (B)
VR2006	100K (B)
VR2010	———
R2022	———

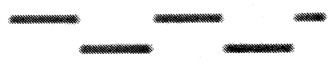
- INPUT SIGNAL
- OUTPUT SIGNAL

* - REFER TO THE COMPARISON CHART

Ref No.2000 Series.

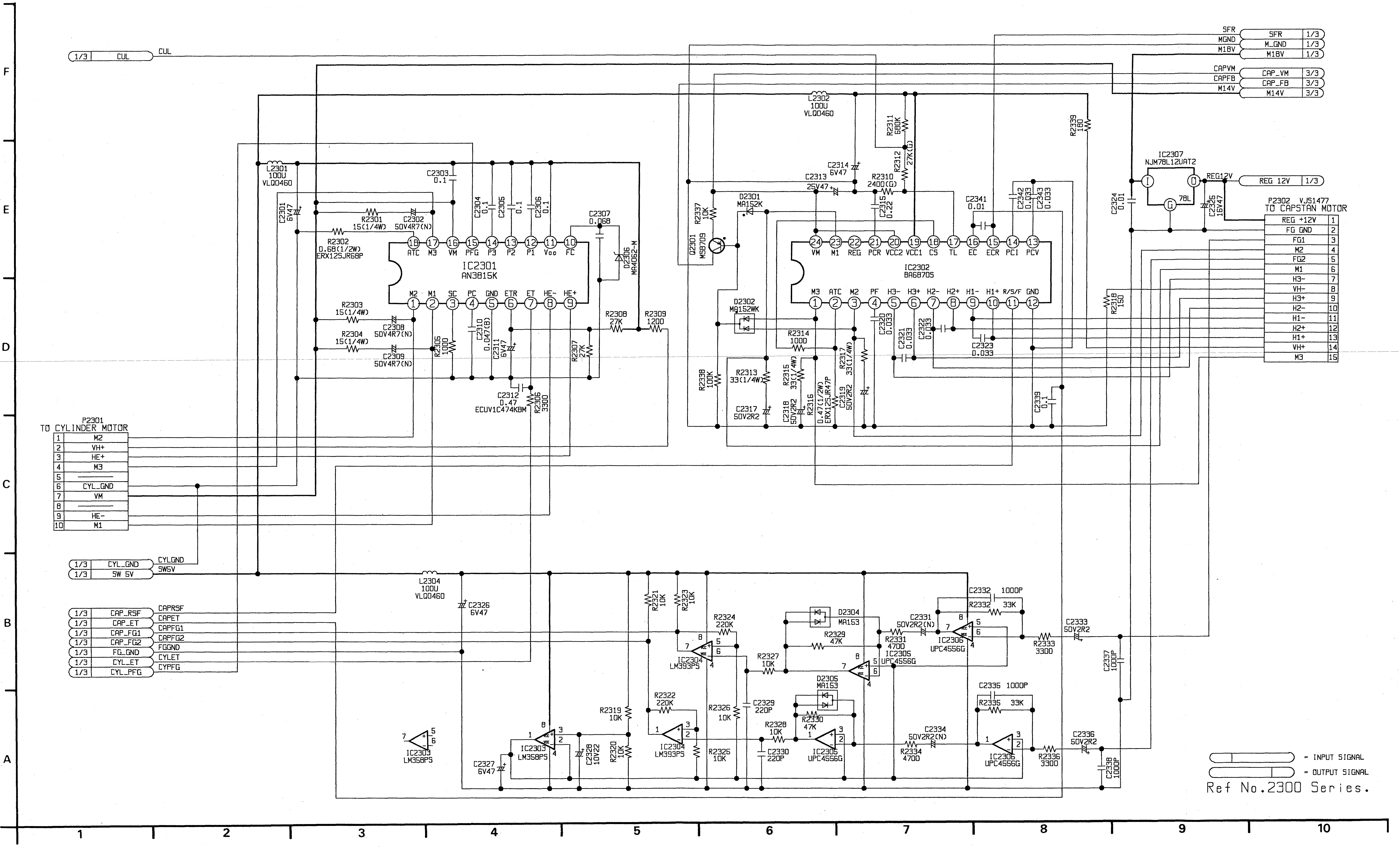
IC2003 MN1280-R


V1
V2
POWER VOLTAGE DET
OUTPUT CIRCUIT
1
2
3



TP2002 5.0Vp-p PLAY

MOTOR DRIVE SECTION SCHEMATIC DIAGRAM (E5)

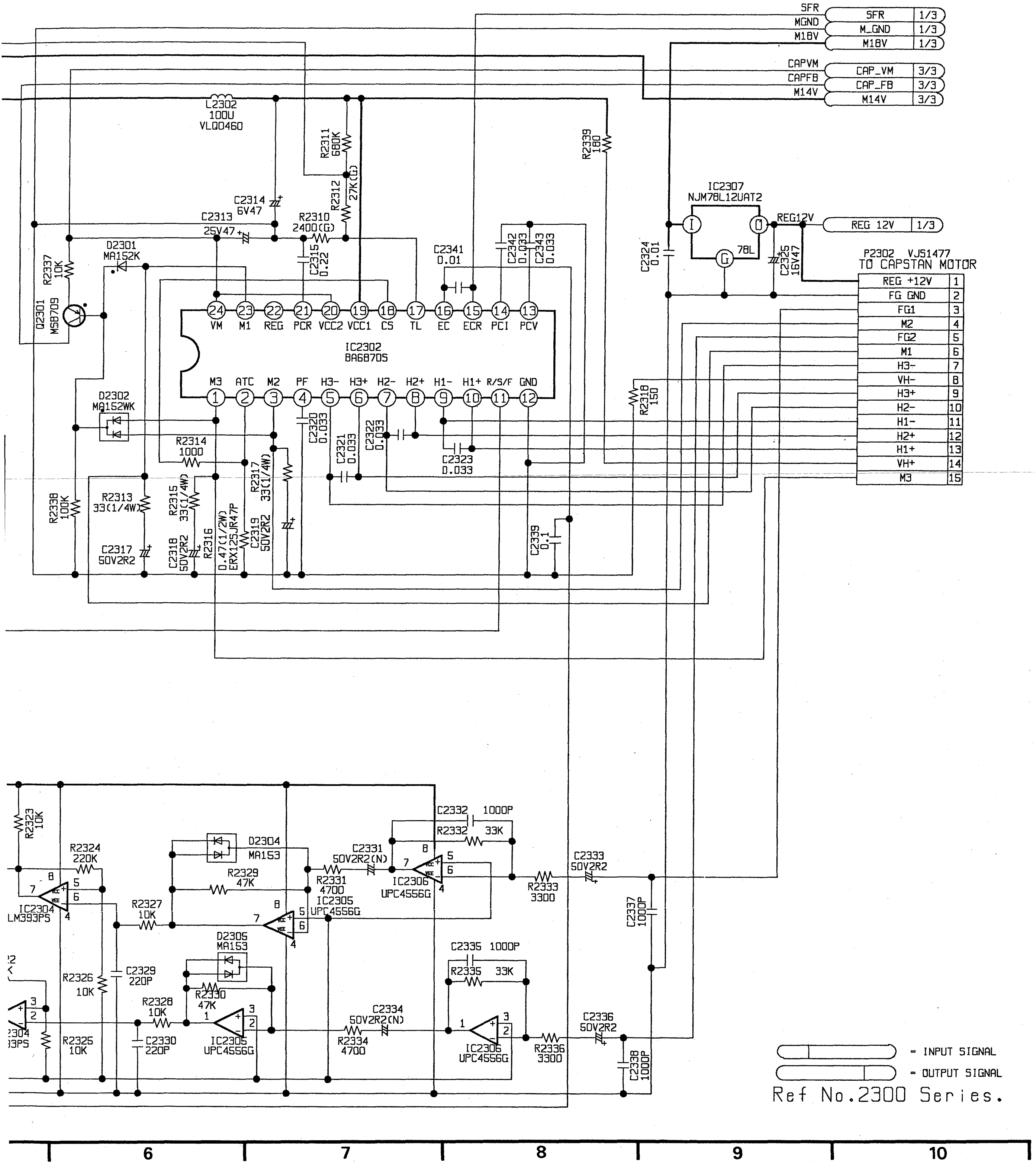

F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
1/3 CUL
CUL
1/3 CYL_GND
1/3 SW 5V
CYLGND
SWSV
1/3 CAP_RSF
1/3 CAP_ET
1/3 CAP_FG1
1/3 CAP_FG2
1/3 FG_GND
1/3 CYL_ET
1/3 CYL_PFG
CAPRSF
CAPET
CAPFG1
CAPFG2
FGGND
CYLET
CYPFG
P2301
TO CYLINDER MOTOR
1 M2
2 VH+
3 HE+
4 M3
5
6 CYL_GND
7 VM
8
9 HE-
10 M1
L2301
100U
VLQ0460
C2301
6V47
R2301
15(1/4W)
C2302
50V4R7(N)
R2302
0.68(1/2W)
ERX12SJR68P
C2303
0.1
C2304
0.1
C2305
0.1
C2306
0.1
C2307
0.068
D2306
MA4062-M
IC2301
AN3815K
ATC M3 VM PFG P3 P2 P1 Vcc FC
M2 M1 SC PC GND ETR ET HE- HE+
R2303
15(1/4W)
C2308
50V4R7(N)
R2304
15(1/4W)
C2309
50V4R7(N)
R2305
1000
C2310
0.047(B)
C2311
6V47
R2307
27K
R2308
27K
R2309
1200
C2312
0.47
ECUV1C474KBM
R2306
3300
L2302
100U
VLQ0460
R2311
680K
R2312
27K(G)
C2314
6V47
C2313
25V47
R2310
2400(G)
C2315
0.22
D2301
MA152K
R2337
10K
Q2301
M58709
D2302
MA152WK
IC2302
BA6870S
VM M1 REG PCR VCC2 VCC1 CS TL EC ECR PC1 PCV
M3 ATC M2 PF H3- H3+ H2- H2+ H1- H1+ R/S/F GND
C2341
0.01
C2342
0.033
C2343
0.033
R2314
1000
C2320
0.033
C2321
0.033
C2322
0.033
C2323
0.033
R2338
100K
R2313
33(1/4W)
R2315
33(1/4W)
R2316
0.47(1/2W)
ERX12SJR47P
R2317
33(1/4W)
C2317
50V2R2
C2318
50V2R2
C2319
50V2R2
C2339
0.1
R2339
180
R2318
150
IC2307
NJM78L12UAT2
78L
I O G
REG12V
C2324
0.01
C2325
16V47
SFR
MGND
M18V
CAPVM
CAPFB
M14V
SFR 1/3
M_GND 1/3
M18V 1/3
CAP_VM 3/3
CAP_FB 3/3
M14V 3/3
REG 12V 1/3
P2302 VJS1477
TO CAPSTAN MOTOR
REG +12V 1
FG GND 2
FG1 3
M2 4
FG2 5
M1 6
H3- 7
VH- 8
H3+ 9
H2- 10
H1- 11
H2+ 12
H1+ 13
VH+ 14
M3 15
L2304
100U
VLQ0460
C2326
6V47
R2321
10K
R2323
10K
R2324
220K
IC2304
LM393PS
D2304
MA153
R2329
47K
C2331
50V2R2(N)
R2331
4700
IC2305
UPC4556G
C2332 1000P
R2332 33K
IC2306
UPC4556G
C2333
50V2R2
R2333
3300
C2337
1000P
R2327
10K
D2305
MA153
C2335 1000P
R2335 33K
R2319
10K
R2322
220K
R2326
10K
C2329
220P
R2328
10K
R2330
47K
C2334
50V2R2(N)
R2334
4700
C2336
50V2R2
R2336
3300
C2338
1000P
IC2303
LM358PS
C2327
6V47
C2328
10V22
R2320
10K
R2325
10K
C2330
220P

= INPUT SIGNAL

= OUTPUT SIGNAL

Ref No.2300 Series.

SERV
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY
REF. NO.
MODE
STOP
PLAY


SFR
MGND
M18V
SFR 1/3
M_GND 1/3
M18V 1/3
CAPVM
CAPFB
M14V
CAP_VM 3/3
CAP_FB 3/3
M14V 3/3
L2302 100U VLQ0460
R2311 680K
R2312 27K(D)
R2339 150
IC2307 NJM78L12UAT2
REG12V
REG 12V 1/3
I
O
G
78L
C2324 0.01
C2325 16V47
C2314 6V47
C2313 25V47
R2310 2400(G)
C2315 0.22
C2341 0.01
C2342 0.033
C2343 0.033
R2337 10K
D2301 MA152K
Q2301 MSB709
P2302 VJS1477 TO CAPSTAN MOTOR
REG +12V 1
FG GND 2
FG1 3
M2 4
FG2 5
M1 6
H3- 7
VH- 8
H3+ 9
H2- 10
H1- 11
H2+ 12
H1+ 13
VH+ 14
M3 15
24 VM
23 M1
22 REG
21 PCR
20 VCC2
19 VCC1
18 CS
17 TL
16 EC
15 ECR
14 PCI
13 PCV
IC2302 BA6870S
M3 1
ATC 2
M2 3
PF 4
H3- 5
H3+ 6
H2- 7
H2+ 8
H1- 9
H1+ 10
R/S/F 11
GND 12
D2302 MA152WK
R2314 1000
R2318 150
C2320 0.033
C2321 0.033
C2322 0.033
C2323 0.033
R2338 100K
R2313 33(1/4W)
R2315 33(1/4W)
R2317 33(1/4W)
C2317 50V2R2
C2318 50V2R2
R2316 0.47(1/2W) ERX12SJR47P
C2319 50V2R2
C2339 0.1
R2323 10K
R2324 220K
IC2304 LM393PS
R2327 10K
D2304 MA153
R2329 47K
C2331 50V2R2(N)
R2331 4700
IC2305 UPC4556G
IC2306 UPC4556G
C2332 1000P
R2332 33K
C2333 50V2R2
R2333 3300
C2337 1000P
D2305 MA153
R2330 47K
R2326 10K
C2329 220P
R2328 10K
C2330 220P
R2325 10K
C2334 50V2R2(N)
R2334 4700
C2335 1000P
R2335 33K
C2336 50V2R2
R2336 3300
C2338 1000P
= INPUT SIGNAL
= OUTPUT SIGNAL
Ref No.2300 Series.
6
7
8
9
10

SERVO ICs DC VOLTAGE CHART

REF. NO.	IC2001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0.1	4.6	0	0	0	0	0	4.5	5.0	5.0	0	0	0	0	2.5	0	0	0	0
PLAY	0	0.2	4.5	0	5.1	0	0	0	4.5	2.5	5.0	0	0	0	0	2.5	0	0	0	0
REF. NO.	IC2001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	5.1	2.7	4.3	0.5	2.3	3.0	3.0	0	2.5	2.4	2.6	4.8	0	0	0	2.5	2.5	0	2.5
PLAY	0	5.1	2.6	2.4	3.0	2.3	2.4	2.4	0	2.5	2.6	2.5	4.8	0	0	0	2.5	2.5	0	2.9
REF. NO.	IC2001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.5	5.1	5.0	0.1	0	0	0	0	0	0	0	5.0	5.0	0	0	0.2	5.0	5.0	0	0
PLAY	2.5	5.1	5.0	3.0	2.5	0	0	0	0	0	0	5.0	0	5.0	0	0.2	5.0	5.0	0	2.5
REF. NO.	IC2001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
STOP	5.0	2.1	4.9	0.6	5.0	0	5.0	0	0	0	5.0	0	0	0	0	5.0	5.0	0	0	0
PLAY	5.0	0	4.9	4.9	5.0	0	5.0	0	0	0	5.0	0	0	0	0	5.0	5.0	0	0	0
REF. NO.	IC2001																			
MODE	81	82	83	84																
STOP	0	2.2	2.3	5.0																
PLAY	0	2.2	2.3	5.0																
REF. NO.	IC2002										IC2003									
MODE	1	2	3	4	5	6	7	8			G	V	O							
STOP	0	0	0	0	0	0	0	5.1			0	5.0	5.0							
PLAY	0	0	0	0	5.0	0	0	5.1			0	5.0	5.0							
REF. NO.	IC2004										IC2006									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5					
STOP	0	0	2.8	5.0	0	0	0	5.1			5.0	0	0	5.1	5.1					
PLAY	0	0	2.8	5.0	0	0	0	5.1			2.5	2.5	0	5.1	5.1					
REF. NO.	IC2007																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0	5.1	5.1	0	0	0	5.1	5.1	0.2	0	5.1	5.1	5.1						
PLAY	0	0	5.1	5.1	0	0	0	5.1	5.1	0.2	0	5.1	5.1	5.1						
REF. NO.	IC2011																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0	0	0	5.1	5.1	0	0	0	0	0	5.1	5.0	5.1						
PLAY	2.5	2.5	2.5	2.5	5.1	2.5	0	0	0	0	0	5.1	5.0	5.1						
REF. NO.	IC2012																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	5.0	0	5.1	5.1	0	0	0	0	0	5.1	5.1	0	0	5.1						
PLAY	5.0	2.5	2.5	5.1	2.5	0	0	2.5	2.5	2.5	2.5	2.5	2.5	5.1						
REF. NO.	IC2014										IC2015									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5					
STOP	4.9	2.5	3.1	0	2.5	4.9	0.1	5.1			2.5	2.5	0	5.0	5.1					
PLAY	4.9	2.5	3.1	0	2.5	4.9	0.2	5.1			2.5	2.5	0	5.0	5.1					
REF. NO.	IC2010																			
MODE	1	2	3	4	5	6	7	8												
STOP	2.5	2.5	2.5	0	2.4	2.4	2.5	12.1												
PLAY	2.5	2.5	2.5	0	2.4	2.5	2.5	12.1												
REF. NO.	IC2301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
STOP	13.0	13.0	0.3	0.1	0	2.5	4.3	0.4	0.6	1.2	5.0	4.2	4.2	3.9	5.0	13.0	13.0	0		
PLAY	13.0	13.0	0.4	1.1	0	2.5	2.5	0.5	0.5	2.7	5.0	3.6	3.6	3.6	1.1	13.1	12.9	0.1		
REF. NO.	IC2302																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.5	0	0.5	1.7	2.3	2.3	2.3	2.3	2.3	2.3	2.1	0	4.5	0.8	2.8	0.2	0.4	0	5.0	7.6
PLAY	1.5	0	1.5	1.7	2.3	2.3	2.3	2.3	2.3	2.3	0	0	0.6	0.6	2.8	2.6	0.4	0	5.0	7.6
REF. NO.	IC2302																			
MODE	21	22	23	24																
STOP	0.1	0	0.5	7.6																
PLAY	1.2	0	1.5	7.5																
REF. NO.	IC2303										IC2304									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	2.5	2.5	2.5	0	0	0	0	5.1			0	2.5	2.4	0	2.4	2.5	0	5.1		
PLAY	2.5	2.5	2.5	0	0	0	0	5.1			2.5	2.5	2.5	0	2.5	2.5	2.5	5.1		
REF. NO.	IC2305										IC2306									
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8		
STOP	2.5	2.5	2.5	0	2.5	2.5	2.5	5.1			2.5	2.5	2.5	0	2.5	2.5	2.5	5.1		
PLAY	2.5	2.5	2.5	0	2.5	2.5	2.5	5.1			2.5	2.5	2.5	0	2.5	2.5	2.5	5.1		
REF. NO.	IC2307																			
MODE	I	G	O																	
STOP	20.7	0	12.1																	
PLAY	19.7	0	12.1																	
REF. NO.	IC2901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	12.9	2.7	2.8	2.8	20.5	2.7	2.8	2.8	20.3	0	0	0	5.3	2.6	0.5	0	0.5	0	0	0
PLAY	13.0	2.7	2.7	2.7	20.4	2.7	2.7	2.7	20.6	0	0	0	1.7	2.5	0.5	0	0.5	0	0	0

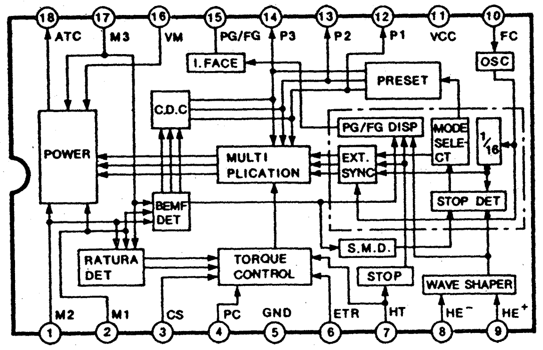
SERVO ICs DC VOLTAGE CHART

REF. NO.	IC2901																			
MODE	21	22	23	24																
STOP	2.4	2.3	2.8	2.6																
PLAY	2.4	2.3	2.8	2.6																
REF. NO.	IC2902																			
MODE	1	2	3	4	5	6	7	8												
STOP	5.0	0	2.6	0	2.7	5.1	0	5.2												
PLAY	5.1	0	2.6	0	2.7	5.2	0	5.2												

SERVO TRs DC VOLTAGE CHART

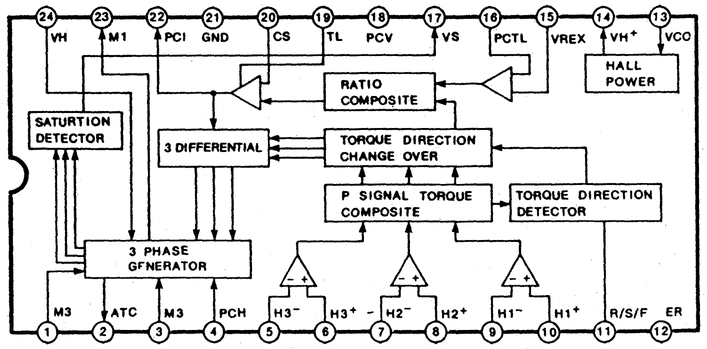
REF. NO.	Q2001			Q2004			Q2301			Q2901			Q2902			Q2903		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	3.4	5.1	3.7	1.8	5.1	1.9	2.7	2.6	2.1	7.6	2.6	4.4	0	0	0.7	0	20.6	0
PLAY	3.4	5.1	3.7	1.8	5.1	1.9	2.8	2.6	2.2	7.6	2.5	4.3	0	0.2	0.4	0	16.9	0.2
REF. NO.	Q2904			Q2905			Q2906			Q2907			Q2908			Q2909		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	20.7	8.3	20.7	2.8	2.7	2.2	4.8	2.7	4.3	20.7	5.0	20.6	2.8	2.7	2.2	4.9	2.7	4.3
PLAY	19.7	12.6	19.5	2.7	2.7	2.1	4.7	2.6	4.1	19.7	13.4	19.5	3.0	2.7	2.4	4.8	2.6	4.2
REF. NO.	Q2910			Q2911			Q2912											
MODE	E	C	B	E	C	B	E	C	B									
STOP	20.7	5.0	20.6	0	0	0	13.0	20.7	14.1									
PLAY	19.7	13.4	19.5	0	0	0	13.1	19.7	14.2									
REF. NO.	QR2001			QR2002			QR2003			QR2004			QR2005			QR2901		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	0	5.0	0	0	5.0	0	4.4	0	0	4.7	0	0	0.1	5.0	0	2.6	0
PLAY	0	0	5.0	0	0	5.0	0	4.4	0	0	4.8	0	0	0.2	0	0	2.5	0
REF. NO.	QR2902			QR2903			QR2904											
MODE	E	C	B	E	C	B	E	C	B									
STOP	0	2.6	0	5.1	0	7.6	5.4	0	5.0									
PLAY	0	2.5	0	5.1	0	7.6	5.4	0	5.0									

IC2301 AN3815K



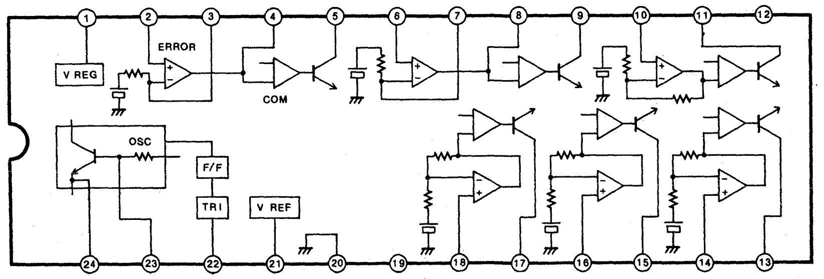
ATC
M3
VM
PG/FG
P3
P2
P1
VCC
FC
I. FACE
OSC
PRESET
C.D.C
PG/FG DISP
MODE SELECT
1/16
POWER
MULTI PLICATION
EXT. SYNC
STOP DET
BEMF DET
S.M.D.
RATURA DET
TORQUE CONTROL
STOP
WAVE SHAPER
M2
M1
CS
PC
GND
ETR
HT
HE⁻
HE⁺

IC2302 XRA6435S



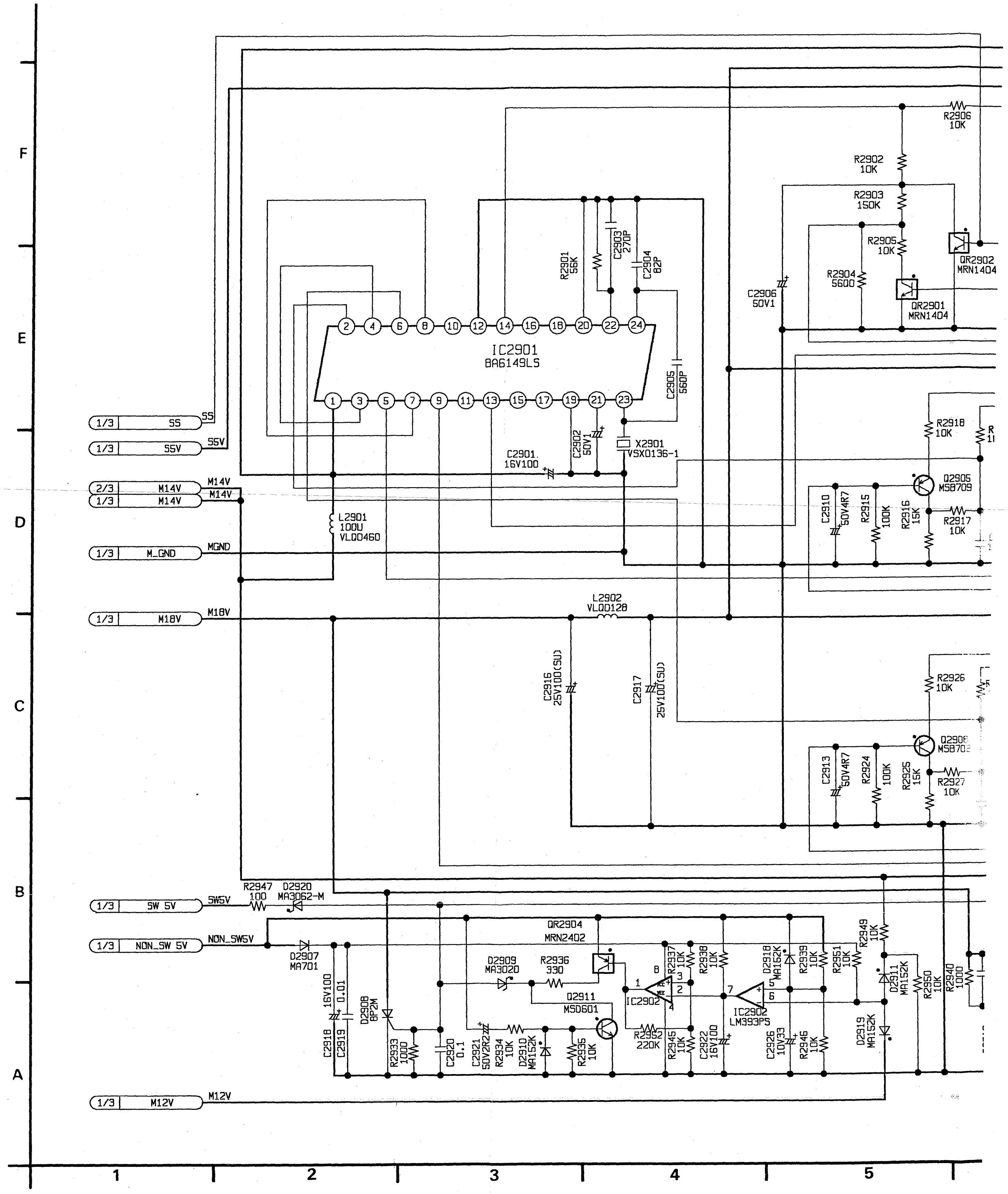
VH
M1
PCI
GND
CS
TL
PCV
VS
PCTL
VREX
VH⁺
VCO
HALL POWER
RATIO COMPOSITE
SATURATION DETECTOR
3 DIFFERENTIAL
TORQUE DIRECTION CHANGE OVER
P SIGNAL TORQUE COMPOSITE
TORQUE DIRECTION DETECTOR
3 PHASE GENERATOR
M3
ATC
M3
PCH
H3⁻
H3⁺
H2⁻
H2⁺
H1⁻
H1⁺
R/S/F
ER

IC2901 BA6149LS



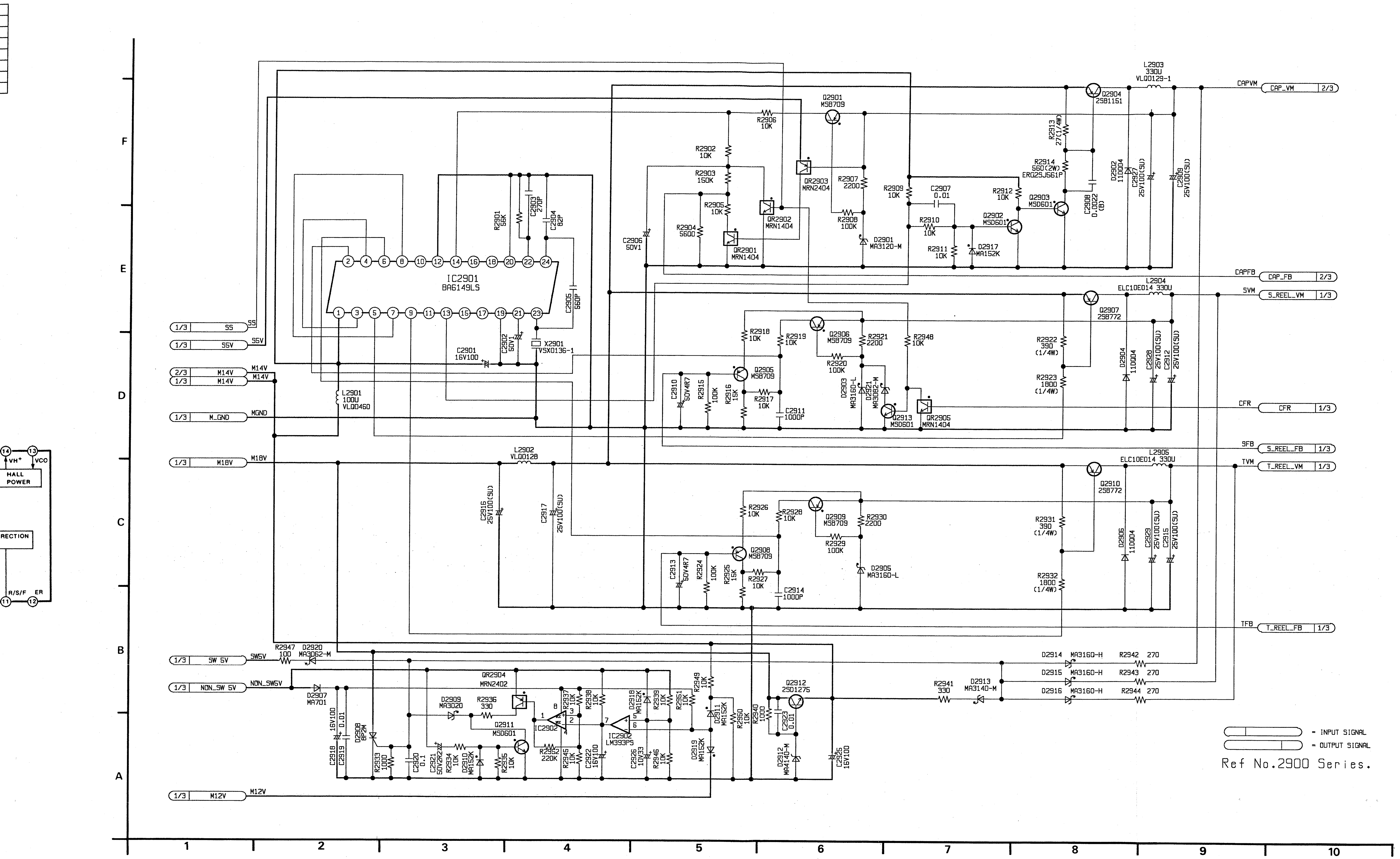
ERROR
V REG
COM
OSC
F/F
TRI
V REF

DC-DC SECTION SCHEMATIC DIAGRAM (E5)

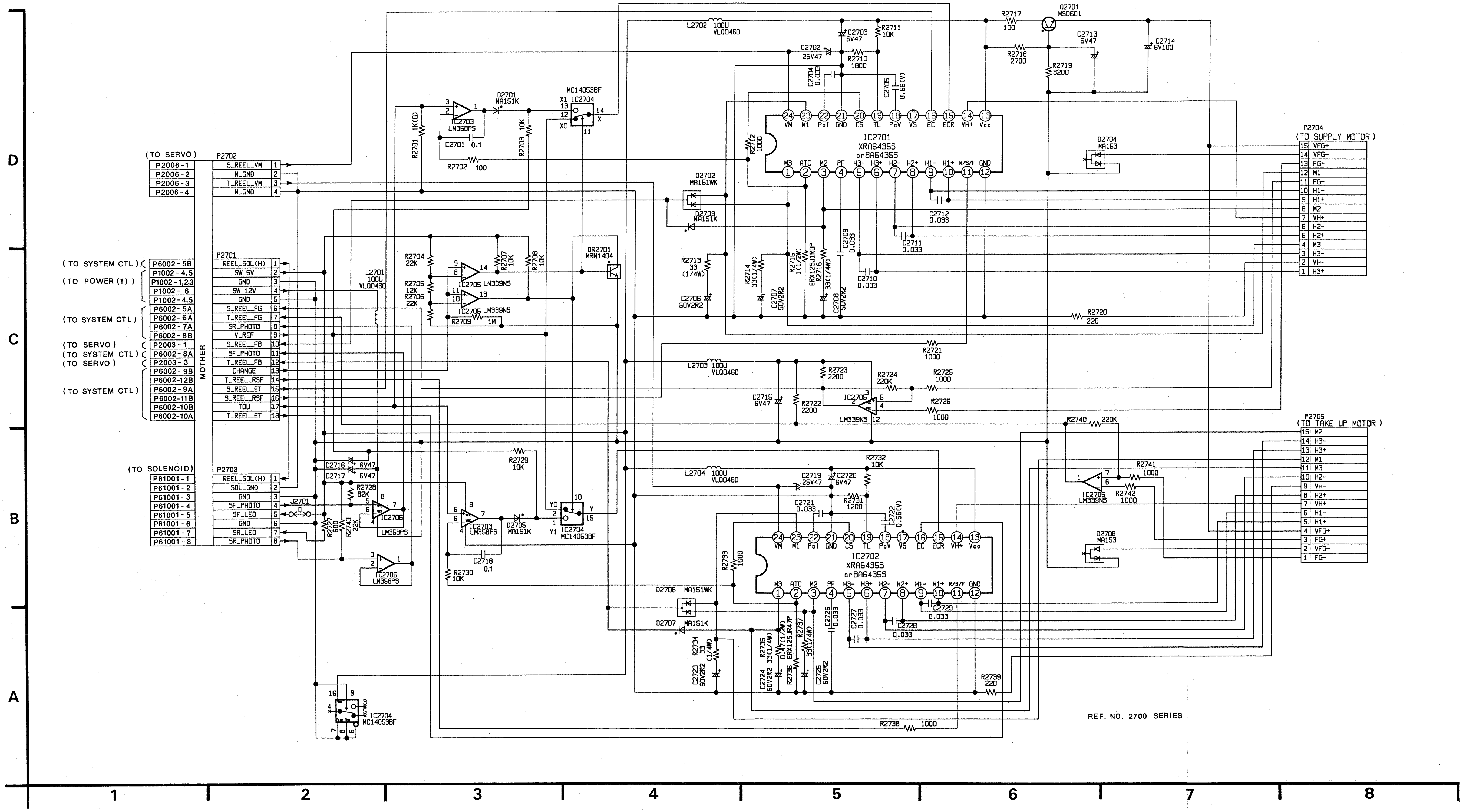


F
E
D
C
B
A
1
2
3
4
5
IC2901
BA6149LS
R2901 56K
C2903 270P
C2904 82P
C2905 560P
C2901 16V100
C2902 50V1
X2901 VSX0136-1
L2901 100U VLQ0460
L2902 VLQ0128
C2916 25V100(SU)
C2917 25V100(SU)
R2906 10K
R2902 10K
R2903 150K
R2905 10K
R2904 5600
QR2902 MRN1404
QR2901 MRN1404
C2906 50V1
R2918 10K
Q2905 MSB709
C2910 50V4R7
R2915 100K
R2916 15K
R2917 10K
R2926 10K
Q2906 MSB709
C2913 50V4R7
R2924 100K
R2925 15K
R2927 10K
1/3 5S
1/3 S5V
2/3 M14V
1/3 M14V
1/3 M_GND
1/3 M18V
1/3 SW 5V
1/3 NON_SW 5V
1/3 M12V
5S
S5V
M14V
MGND
M18V
SW5V
NON_SW5V
M12V
R2947 100
D2920 MA3062-M
D2907 MA701
QR2904 MRN2402
D2909 MA3020
R2936 330
D2911 MSD601
IC2902
LM393PS
R2937 10K
R2938 10K
R2952 220K
R2945 10K
C2922 16V100
D2918 MA152K
R2939 10K
R2951 10K
R2949 10K
D2911 MA152K
R2950 10K
R2940 1000
C2926 10V33
R2946 10K
D2919 MA152K
C2918 16V100
C2919 0.01
D2908 BP2M
R2933 1000
C2920 0.1
C2921 50V2R2
R2934 10K
D2910 MA152K
R2935 10K

DC-DC SECTION SCHEMATIC DIAGRAM (E5)


VH+
VCO
HALL
POWER
RECTION
R/S/F
ER
14
13
11
12
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
1/3 SS SS
1/3 SSV SSV
2/3 M14V M14V
1/3 M14V M14V
1/3 M_GND MGND
1/3 M18V M18V
1/3 SW 5V SWSV
1/3 NON_SW 5V NON_SWSV
1/3 M12V M12V
IC2901
BA6149LS
R2901 56K
C2903 270P
C2904 82P
C2905 560P
C2901 16V100
C2902 50V1
X2901 VSX0136-1
L2901 100U VLQ0460
L2902 VLQ0128
C2916 25V100(SU)
C2917 25V100(SU)
R2902 10K
R2903 150K
R2904 5600
R2905 10K
R2906 10K
C2906 50V1
QR2901 MRN1404
QR2902 MRN1404
QR2903 MRN2404
Q2901 MSB709
R2907 2200
R2908 100K
D2901 MA3120-M
R2909 10K
C2907 0.01
R2910 10K
R2911 10K
D2917 MA152K
R2912 10K
Q2902 MSD601
Q2903 MSD601
R2913 27(1/4W)
R2914 560(2W) ERG2SJ561P
C2908 0.0022 (B)
Q2904 2SB1151
L2903 330U VLQ0129-1
D2902 11DQ04
C2927 25V100(SU)
C2909 25V100(SU)
CAPVM CAP_VM 2/3
CAPFB CAP_FB 2/3
L2904 ELC10E014 330U
SVM S_REEL_VM 1/3
Q2907 2SB772
R2918 10K
R2919 10K
Q2906 MSB709
R2921 2200
R2948 10K
R2920 100K
Q2905 MSB709
C2910 50V4R7
R2915 100K
R2916 15K
R2917 10K
C2911 1000P
D2903 MA3160-L
D2921 MA3082-M
Q2913 MSD601
QR2905 MRN1404
R2922 390 (1/4W)
R2923 1800 (1/4W)
D2904 11DQ04
C2928 25V100(SU)
C2912 25V100(SU)
CFR CFR 1/3
SFB S_REEL_FB 1/3
L2905 ELC10E014 330U
TVM T_REEL_VM 1/3
Q2910 2SB772
R2926 10K
R2928 10K
Q2909 MSB709
R2930 2200
R2929 100K
Q2908 MSB709
C2913 50V4R7
R2924 100K
R2925 15K
R2927 10K
C2914 1000P
D2905 MA3160-L
R2931 390 (1/4W)
R2932 1800 (1/4W)
D2906 11DQ04
C2929 25V100(SU)
C2915 25V100(SU)
TFB T_REEL_FB 1/3
R2947 100
D2920 MA3062-M
D2907 MA701
C2918 16V100
C2919 0.01
D2908 BP2M
R2933 1000
C2920 0.1
C2921 50V2R2
R2934 10K
D2910 MA152K
QR2904 MRN2402
D2909 MA3020
R2936 330
D2911 MSD601
R2935 10K
R2952 220K
IC2902
R2937 10K
R2938 10K
R2945 10K
C2922 16V100
IC2902 LM393PS
D2918 MA152K
C2926 10V33
R2946 10K
R2939 10K
R2951 10K
R2949 10K
D2911 MA152K
D2919 MA152K
R2950 10K
R2940 100
C2923 0.01
D2912 MA4140-M
Q2912 2SD1275
C2925 16V100
R2941 330
D2913 MA3140-M
D2914 MA3160-H
D2915 MA3160-H
D2916 MA3160-H
R2942 270
R2943 270
R2944 270
= INPUT SIGNAL
= OUTPUT SIGNAL
Ref No.2900 Series.

REEL DRIVE SCHEMATIC DIAGRAM (E6)


(TO SERVO)
P2702
P2006-1
P2006-2
P2006-3
P2006-4
S_REEL_VM
M_GND
T_REEL_VM
M_GND
(TO SYSTEM CTL)
(TO POWER (1))
(TO SYSTEM CTL)
(TO SERVO)
(TO SYSTEM CTL)
(TO SERVO)
(TO SYSTEM CTL)
P2701
P6002-5B
P1002-4,5
P1002-1,2,3
P1002- 6
P1002-4,5
P6002-5A
P6002-6A
P6002-7A
P6002-8B
P2003-1
P6002-8A
P2003-3
P6002-9B
P6002-12B
P6002-9A
P6002-11B
P6002-10B
P6002-10A
REEL_SOL(H)
SW 5V
GND
SW 12V
GND
S_REEL_FG
T_REEL_FG
SR_PHOTO
V_REF
S_REEL_FB
SF_PHOTO
T_REEL_FB
CHANGE
T_REEL_RSF
S_REEL_ET
S_REEL_RSF
TQU
T_REEL_ET
MOTHER
(TO SOLENOID)
P2703
P61001-1
P61001-2
P61001-3
P61001-4
P61001-5
P61001-6
P61001-7
P61001-8
REEL_SOL(H)
SOL_GND
GND
SF_PHOTO
SF_LED
GND
SR_LED
SR_PHOTO
J2701
IC2703 LM358PS
D2701 MA151K
C2701 0.1
R2701 1K(G)
R2702 100
R2703 10K
MC14053BF
IC2704
X1 X0 X
R2704 22K
R2705 12K
R2706 22K
R2707 10K
R2708 10K
R2709 1M
IC2705 LM339NS
L2701 100U VL00460
QR2701 MRN1404
L2702 100U VL00460
C2702 25V47
C2703 6V47
C2704 0.033
C2705 0.56(V)
R2710 1800
R2711 10K
R2712 1000
IC2701
XRA6435S
orBA6435S
VM M1 PoI GND CS TL PoV VS EC ECR VH+ Voo
M3 ATC M2 PF H3- H3+ H2- H2+ H1- H1+ R/S/F GND
D2702 MA151WK
D2703 MA151K
R2713 33 (1/4W)
C2706 50V2R2
R2714 33(1/4W)
R2715 1(1/2W)
C2707 50V2R2
R2716 ERX125J1R0P 33(1/4W)
C2708 50V2R2
C2709 0.033
C2710 0.033
C2711 0.033
C2712 0.033
R2717 100
Q2701 MSD601
R2718 2700
R2719 8200
C2713 6V47
C2714 6V100
D2704 MA153
R2720 220
R2721 1000
L2703 100U VL00460
R2723 2200
R2722 2200
C2715 6V47
R2724 220K
R2725 1000
R2726 1000
IC2705 LM339NS
P2704
(TO SUPPLY MOTOR)
15 VFG+
14 VFG-
13 FG+
12 M1
11 FG-
10 H1-
9 H1+
8 M2
7 VH+
6 H2-
5 H2+
4 M3
3 H3-
2 VH-
1 H3+
R2740 220K
P2705
(TO TAKE UP MOTOR)
15 M2
14 H3-
13 H3+
12 M1
11 M3
10 H2-
9 VH-
8 H2+
7 VH+
6 H1-
5 H1+
4 VFG+
3 FG+
2 VFG-
1 FG-
R2741 1000
R2742 1000
IC2705 LM339NS
D2708 MA153
C2716 6V47
C2717 6V47
R2728 82K
R2743 22K
R2727 680
IC2706 LM358PS
R2729 10K
IC2703 LM358PS
D2705 MA151K
Y0 Y1 Y
IC2704 MC14053BF
C2718 0.1
R2730 10K
L2704 100U VL00460
C2719 25V47
C2720 6V47
R2732 10K
C2721 0.033
R2731 1200
C2722 0.56(V)
R2733 1000
IC2702
XRA6435S
orBA6435S
D2706 MA151WK
D2707 MA151K
R2734 33 (1/4W)
C2723 50V2R2
R2735 33(1/4W)
C2724 50V2R2
R2736 ERX125JR47P
R2737 33(1/4W)
C2725 50V2R2
C2726 0.033
C2727 0.033
C2728 0.033
C2729 0.033
R2739 220
R2738 1000
IC2704 MC14053BF
REF. NO. 2700 SERIES
A
B
C
D
1
2
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4
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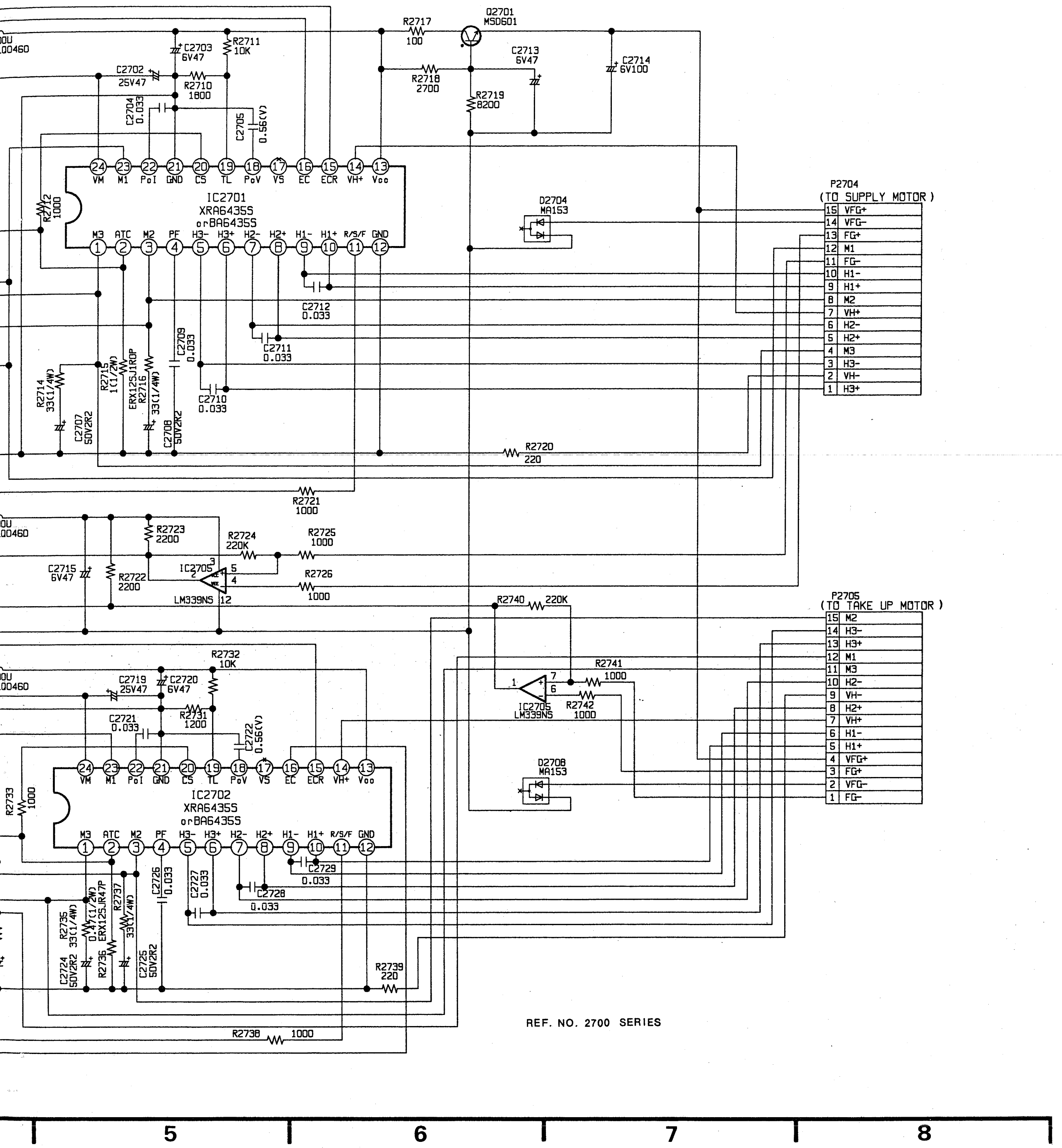
6
7
8


R2717
100
Q2701
MSD601
C2713
6V47
C2714
6V100
R2718
2700
R2719
8200
C2703
6V47
R2711
10K
C2702
25V47
R2710
1800
C2704
0.033
C2705
0.56(V)
IC2701
XRA6435S
orBA6435S
VM
M1
Pol
GND
CS
TL
PoV
VS
EC
ECR
VH+
Voo
M3
ATC
M2
PF
H3-
H3+
H2-
H2+
H1-
H1+
R/S/F
GND
R2712
1000
D2704
MA153
P2704
(TO SUPPLY MOTOR)
15 VFG+
14 VFG-
13 FG+
12 M1
11 FG-
10 H1-
9 H1+
8 M2
7 VH+
6 H2-
5 H2+
4 M3
3 H3-
2 VH-
1 H3+
C2712
0.033
C2711
0.033
C2709
0.033
C2710
0.033
R2714
33(1/4W)
R2715
1(1/2W)
ERX12SJ1R0P
R2716
33(1/4W)
C2707
50V2R2
C2708
50V2R2
R2720
220
R2721
1000
R2723
2200
R2724
220K
R2725
1000
C2715
6V47
R2722
2200
IC2705
LM339NS
R2726
1000
R2740
220K
P2705
(TO TAKE UP MOTOR)
15 M2
14 H3-
13 H3+
12 M1
11 M3
10 H2-
9 VH-
8 H2+
7 VH+
6 H1-
5 H1+
4 VFG+
3 FG+
2 VFG-
1 FG-
R2741
1000
R2742
1000
IC2705
LM339NS
R2732
10K
C2719
25V47
C2720
6V47
C2721
0.033
R2731
1200
C2722
0.56(V)
D2708
MA153
R2733
1000
IC2702
XRA6435S
orBA6435S
C2729
0.033
C2728
0.033
C2726
0.033
C2727
0.033
R2735
33(1/4W)
R2736
ERX12SJR47P
R2737
33(1/4W)
C2724
50V2R2
C2725
50V2R2
R2739
220
R2738
1000
5
6
7
8

REF. NO. 2700 SERIES

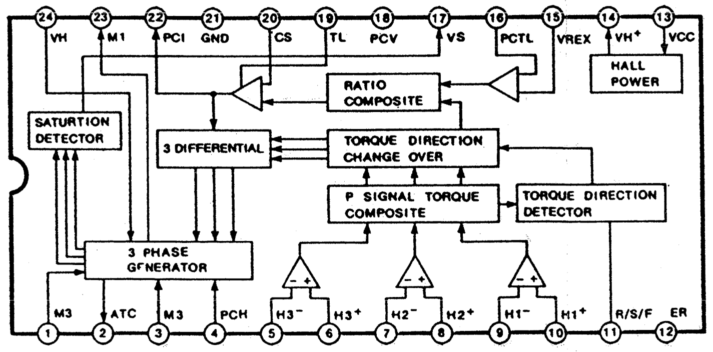
REEL DRIVE ICs DC VOLTAGE CHART

REF. NO.	IC2701																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.1	0	2.1	1.4	2.7	2.6	2.7	2.6	2.6	2.7	2.5	0	4.9	3.6	2.5	2.4	0	0	0.7	0
PLAY	0.9	0.1	0.9	1.4	2.7	2.7	2.7	2.7	2.7	2.7	0	0	4.9	3.6	2.4	2.2	4.4	0.6	0.8	0.1
REF. NO.	IC2701																			
MODE	21	22	23	24																
STOP	0	0	2.1	4.9																
PLAY	0	0.7	0.9	4.7																
REF. NO.	IC2702																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.1	0	2.1	1.4	2.7	2.6	2.6	2.7	2.7	2.6	2.5	0	5.0	3.6	2.5	2.4	0	0	0.5	0
PLAY	2.1	0.1	1.8	1.4	2.7	2.7	2.7	2.7	2.7	2.7	0	0	5.0	3.7	2.7	2.4	4.3	0.6	0.5	0.1
REF. NO.	IC2702																			
MODE	21	22	23	24																
STOP	0	0	2.1	4.9																
PLAY	0	0.7	2.1	4.6																
REF. NO.	IC2703																			
MODE	1	2	3	4	5	6	7	8												
STOP	3.1	0	0	0	0	0	3.7	5.0												
PLAY	2.2	0.1	0.1	0	0.1	0.1	3.1	5.0												
REF. NO.	IC2704																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	3.3	2.5	0	0	0	0	0	0	0	2.5	3.3	2.5	2.5	5.0						
PLAY	0.7	0.7	0.7	0.7	0.7	0	0	5.0	0	2.4	3.2	2.4	2.6	5.0						
REF. NO.	IC2705																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	5.0	0.1	5.0	2.3	2.2	2.2	2.3	3.1	1.0	2.0	1.0	0	0	0						
PLAY	2.3	2.3	5.0	0	2.0	2.2	2.2	3.0	2.4	1.9	2.4	0	5.0	0						
REF. NO.	IC2706																			
MODE	1	2	3	4	5	6	7	8												
STOP	0.6	0.6	0.1	0	0.1	0.6	0.6	11.9												
PLAY	4.9	4.9	4.9	0	2.5	2.5	2.5	11.9												

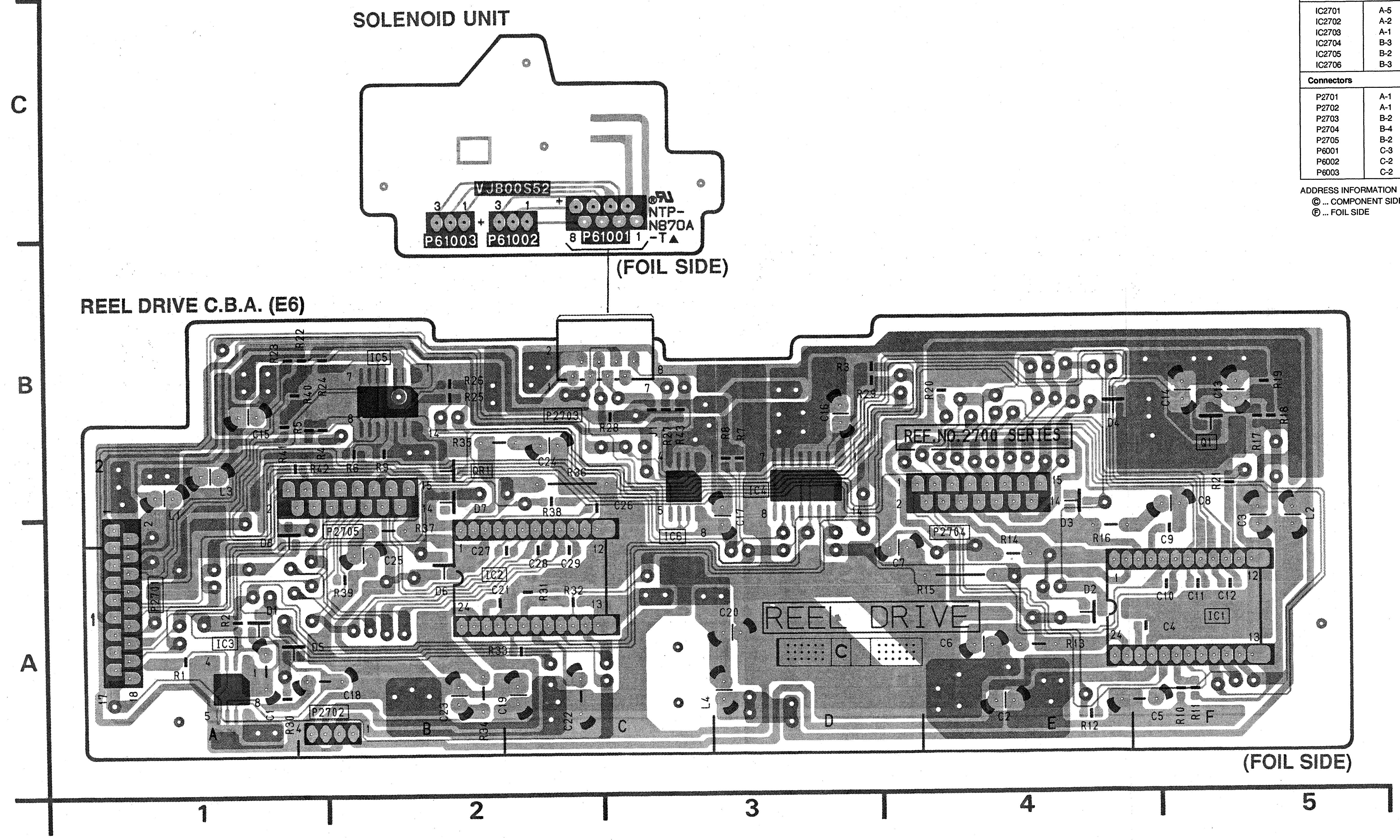
REEL DRIVE TRs DC VOLTAGE CHART

REF. NO.	Q2701		
MODE	E	C	B
STOP	2.9	4.0	3.6
PLAY	2.9	3.9	3.6
REF. NO.	QR2701		
MODE	E	C	B
STOP	0	0	0
PLAY	0	5.0	0

IC2701, IC2702 XRA6435S


24
VH
23
M1
22
PCI
21
GND
20
CS
19
TL
18
PCV
17
VS
16
PCTL
15
VREX
14
VH+
13
VCC
RATIO COMPOSITE
HALL POWER
SATURTION DETECTOR
3 DIFFERENTIAL
TORQUE DIRECTION CHANGE OVER
P SIGNAL TORQUE COMPOSITE
TORQUE DIRECTION DETECTOR
3 PHASE GENERATOR
M3
1
ATC
2
M3
3
PCH
4
H3-
5
H3+
6
H2-
7
H2+
8
H1-
9
H1+
10
R/S/F
11
ER
12

REEL DRIVE C.B.A. (E6)


SOLENOID UNIT
VJB00S52
P61003
P61002
P61001
NTP-
N870A
-T▲
(FOIL SIDE)
REEL DRIVE C.B.A. (E6)
REF.NO.2700 SERIES
REEL DRIVE
IC1
IC2
IC3
IC4
IC5
IC6
P2701
P2702
P2703
P2704
P2705
QR1
Q1
(FOIL SIDE)
C
B
A
1
2
3
4
5

REEL DRIVE C.B.A.		
Transistor		
Q2701	B-5	Ⓕ
Transistor-Resistor		
QR2701	B-2	Ⓕ
Integrated Circuits		
IC2701	A-5	Ⓕ
IC2702	A-2	Ⓕ
IC2703	A-1	Ⓕ
IC2704	B-3	Ⓕ
IC2705	B-2	Ⓕ
IC2706	B-3	Ⓕ
Connectors		
P2701	A-1	Ⓕ
P2702	A-1	Ⓕ
P2703	B-2	Ⓕ
P2704	B-4	Ⓕ
P2705	B-2	Ⓕ
P6001	C-3	Ⓕ
P6002	C-2	Ⓕ
P6003	C-2	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

VIDEO 2 C.B.A. (E8)

VIDEO 2 C.B.A.

Transisitors	
Q8001	A-2 Ⓕ
Q8002	A-1 Ⓕ
Q8003	A-3 Ⓕ
Q8004	A-2 Ⓕ
Q8005	B-3 Ⓕ
Q8006	B-3 Ⓕ
Q8007	B-2 Ⓕ
Q8008	C-2 Ⓕ
Q8009	B-2 Ⓕ
Q8010	B-2 Ⓕ
Q8011	D-1 Ⓕ
Q8012	C-2 Ⓕ
Q8013	B-1 Ⓕ
Q8014	G-1 Ⓕ
Q8015	G-2 Ⓕ
Q8016	E-2 Ⓕ
Q8017	G-1 Ⓕ

Transisitor-Resistors	
QR8001	A-2 Ⓕ
QR8002	A-1 Ⓕ
QR8003	A-3 Ⓕ
QR8004	C-3 Ⓕ
QR8005	C-3 Ⓕ
QR8006	D-2 Ⓕ
QR8007	E-1 Ⓕ
QR8008	G-2 Ⓕ
QR8009	F-2 Ⓕ
QR8010	F-2 Ⓕ
QR8011	F-2 Ⓕ
QR8012	F-3 Ⓕ
QR8013	E-2 Ⓕ
QR8014	D-2 Ⓕ

Integrated Circuits	
IC8001	F-2 Ⓕ
IC8002	C-1 Ⓕ
IC8003	A-3 Ⓕ
IC8004	D-2 Ⓕ
IC8005	E-1 Ⓕ

Test Points	
TP8001	A-1 Ⓕ
TP8002	B-1 Ⓕ
TP8003	C-1 Ⓕ
TP8004	C-1 Ⓕ
TP8005	D-1 Ⓕ
TPG8001	A-1 Ⓕ

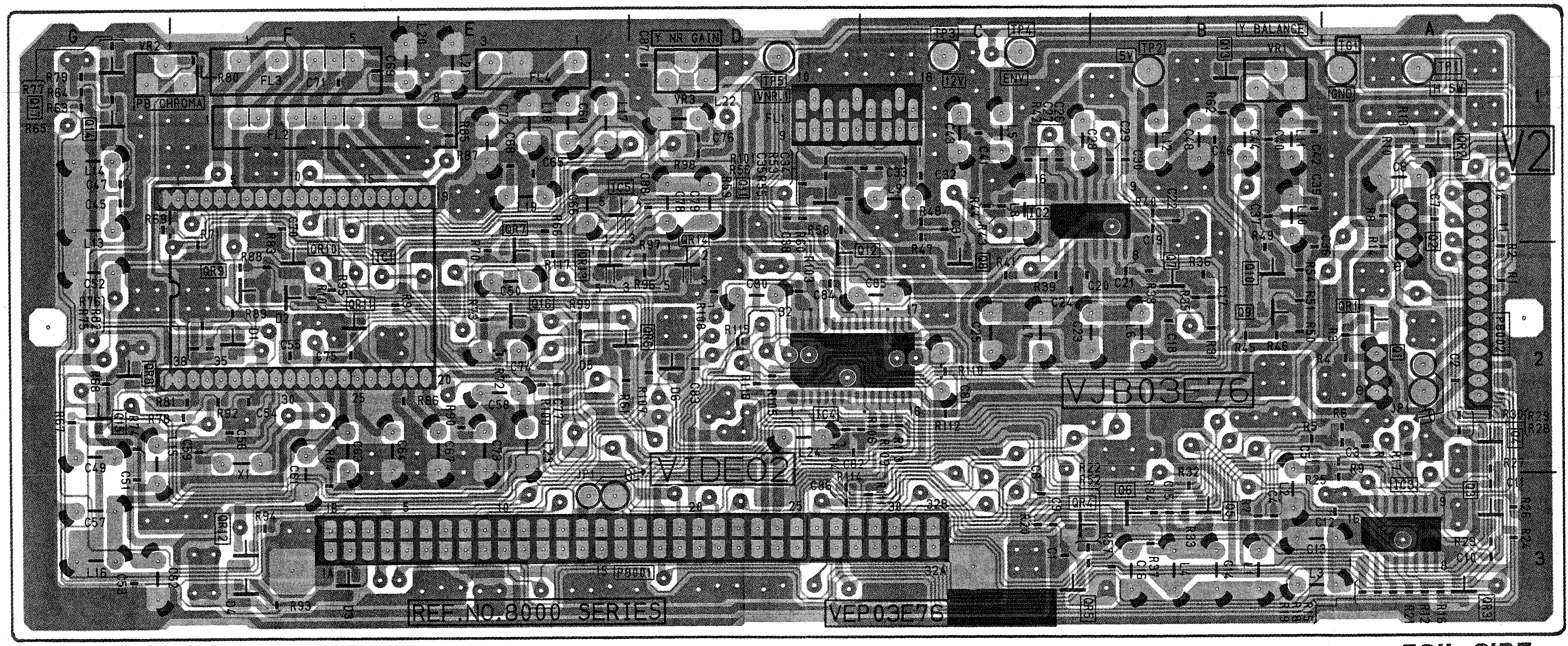
Adjustments	
VR8001	B-1 Ⓕ
VR8002	G-1 Ⓕ
VR8003	D-1 Ⓕ

Connectors	
P8001	E-3 Ⓕ
P8002	A-2 Ⓕ

ADDRESS INFORMATION

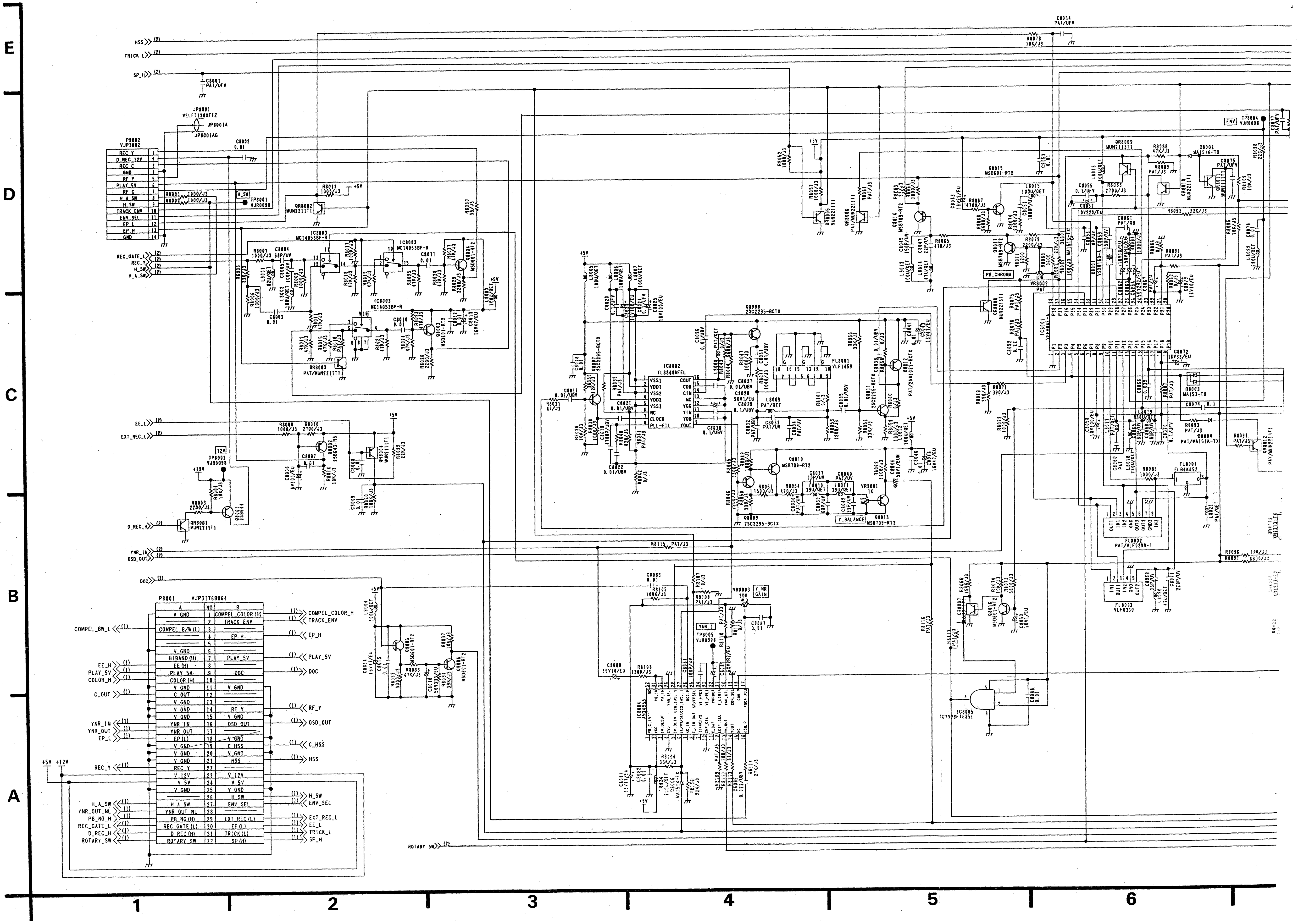
Ⓒ......COMPONENT SIDE

Ⓕ......FOIL SIDE


G
F
E
D
C
B
A
1
2
3
V2
Y NR GAIN
Y BALANCE
PB CHROMA
VR1
VR2
VR3
FL2
FL3
FL4
TP1
TP2
TP3
TP4
TP5
TG1
5V
12V
ENV
GND
H SW
VNR
IC1
IC2
IC3
IC4
IC5
VJB03E76
VIDEO2
P8001
REF.NO.8000 SERIES
VEP03E76

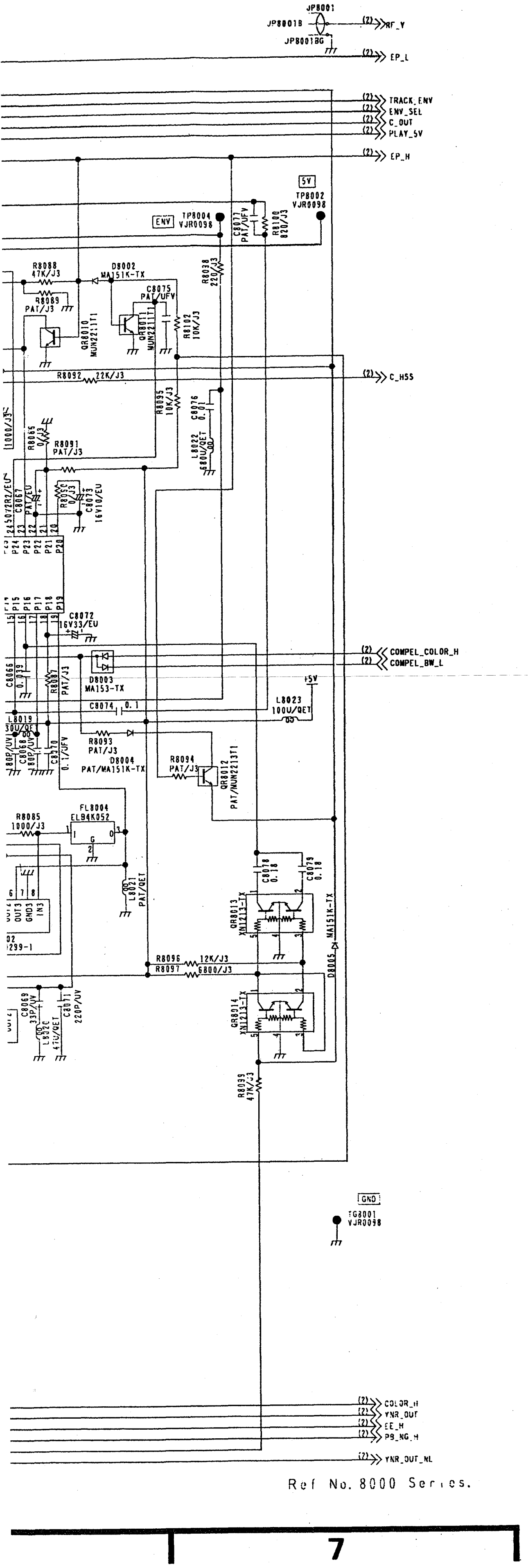
FOIL SIDE

VIDEO 2 SCHEMATIC DIAGRAM (E8)

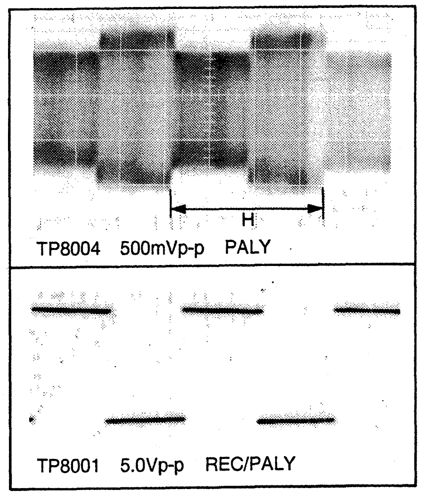


E
D
C
B
A
1
2
3
4
5
6
HSS
TRICK_L
SP_H
REC_GATE_L
REC_Y
H_SW
H_A_SW
EE_L
EXT_REC_L
D_REC_H
YNR_IN
OSD_OUT
DOC
ROTARY SW
P8002 VJP3002
REC Y
D_REC 12V
REC C
GND
RF Y
PLAY 5V
RF C
H_A_SW
H_SW
TRACK ENV
ENV SEL
EP L
EP H
GND
JP8001 VELFT130XFFZ
C8001 PAT/UFV
C8002 0.01
R8001 1000/J3
R8002 1000/J3
TP8001 VJR0098
R8013 1000/J3
QR8002 MUN2211T1
IC8003 MC14053BF-R
R8030 33/J3
C8004 68P/UV
R8007 1000/J3
Q8004 MSD601-RT2
Q8003 PAT/MUN2211T1
R8009 1000/J3
R8010 2700/J3
Q8002 2SB642-RS
QR8004 MUN2211T1
C8007 0.01
TP8003 VJR0098
12V
R8004 10K/J3
R8003 2200/J3
Q8001 2SB644
QR8001 MUN2211T1
IC8002 TL8849AFEL
VSS1
VDD1
VSS2
VDD2
VSS3
NC
CLOCK
PLL-FIL
COUT
COB
CIN
NC
VGG
YIN
YOB
YOUT
Q8008 2SC2295-BCTX
FL8001 VLF1459
Q8010 MSB709-RT2
Q8009 2SC2295-BCTX
VR8001 1K
Y_BALANCE
Q8013 MSB709-RT2
PB_CHROMA
VR8002 PAT
IC8001
QR8009 MUN2113T1
D8002 MA151K-TX
Q8015 MSD601-RT2
L8015 100U/QET
D8003 MA153-TX
D8004 PAT/MA151K-TX
FL8004 CLB4K052
FL8002 PAT/VLF0299-1
FL8003 VLF0330
IC8005 TC7S08F TE85L
TP8006 VJR0098
ENV
C8054 PAT/UFV
R8078 10K/J3
R8115 PAT/J3
VR8003 20K
Y_NR GAIN
YNR.I
TP8005 VJR0098
IC8004
R8096 12K/J3
R8097 6800/J3
P8001 VJP3176B064
+5V
+12V
COMPEL_BW_L
EE_H
PLAY_5V
COLOR_H
C_OUT
YNR_IN
YNR_OUT
EP_L
REC_Y
H_A_SW
YNR_OUT_NL
PB_NG_H
REC_GATE_L
D_REC_H
ROTARY_SW
COMPEL_COLOR_H
TRACK_ENV
EP_H
PLAY_5V
DOC
RF_Y
OSD_OUT
C_HSS
HSS
H_SW
ENV_SEL
EXT_REC_L
EE_L
TRICK_L
SP_H
Q8005 MSD601-RT2
Q8006 MSD601-RT2

A	NO	B
V GND	1	COMPEL COLOR (H)
	2	TRACK ENV
COMPEL B/W (L)	3	
	4	EP H
V GND	5	
V GND	6	
HIBAND (H)	7	PLAY 5V
EE (H)	8	
PLAY 5V	9	DOC
COLOR (H)	10	
V GND	11	V GND
C OUT	12	
V GND	13	
V GND	14	RF Y
V GND	15	V GND
YNR IN	16	OSD OUT
YNR OUT	17	
EP (L)	18	V GND
V GND	19	C HSS
V GND	20	V GND
V GND	21	HSS
REC Y	22	
V 12V	23	V 12V
V 5V	24	V 5V
V GND	25	V GND
	26	H SW
H A SW	27	ENV SEL
YNR OUT NL	28	
PB NG (H)	29	EXT REC (L)
REC GATE (L)	30	EE (L)
D REC (H)	31	TRICK (L)
ROTARY SW	32	SP (H)


JP8001
JP8001B
JP8001BG
RF_V
EP_L
TRACK_ENV
ENV_SEL
C_OUT
PLAY_5V
EP_H
5V
TP8002
VJR0098
ENV
TP8004
VJR0098
C_HSS
COMPEL_COLOR_H
COMPEL_BW_L
GND
TG8001
VJR0098
COLOR_H
YNR_OUT
EE_H
PB_NG_H
YNR_OUT_NL
7

Ref No. 8000 Series.



TP8004 500mVp-p PALY

TP8001 5.0Vp-p REC/PALY

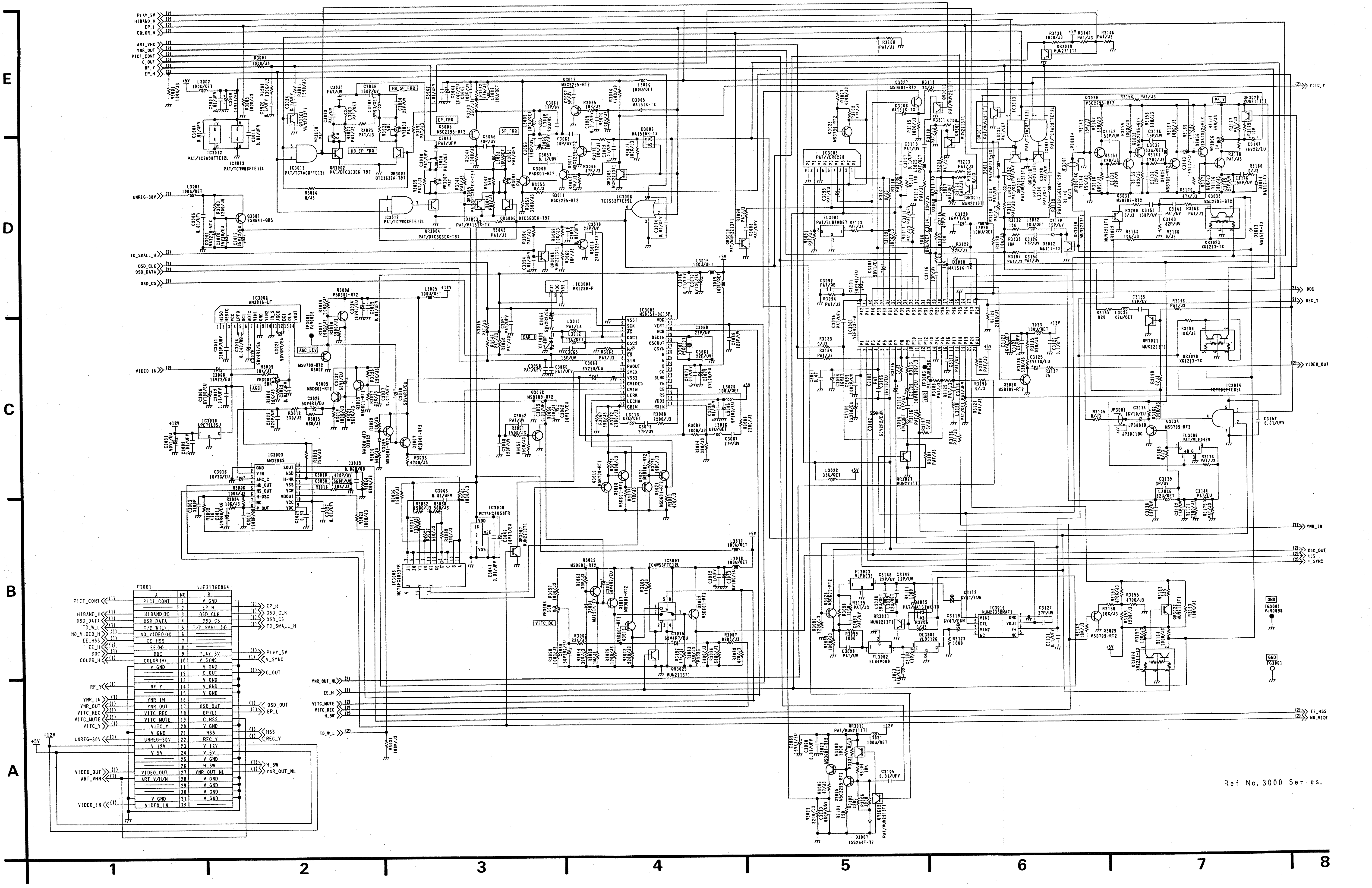
VIDEO 2 ICs DC VOLTAGE CHART

REF. NO.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	-0.4	0	-3.6	0	-3.5	-2.7	-4.8	0	-2.2	0	-1.5	0	0	-2.2	-4.3	0	-3.2	0	-3.3
PLAY	0	-0.4	0	-3.7	0	-3.5	-2.6	-3.4	0	0	0	-1.4	-2.7	0	-3.8	0	0	-3.2	0	-3.3
REF. NO.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
REC	0	0	0	0	-3.3	-3.3	-3.4	-3.4	-3.1	-5.0	-3.6	-0.4	-2.4	-0.4	0.1	-3.8	0	-3.4		
PLAY	0	0	0	0	-3.3	-3.3	-2.4	-0.4	-0.4	-3.8	-3.6	-0.4	-2.4	-0.4	0.1	-3.8	-3.2	-2.5		
REF. NO.	IC8002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
REC	0	0	0	0	0	0	0	0	-3.2	-1.7	-4.0	0	0	0	0	-5.0				
PLAY	0	-3.8	0	-3.9	0	0	0	-2.3	-3.2	-1.9	-1.9	-1.4	-2.7	-1.7	-1.9	-3.0				
REF. NO.	IC8003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
REC	0	0	0	0	0	0	0	0	0	0	-4.0	0	0	0	0	-5.0				
PLAY	0	0	0	0	0	0	0	0	0	-4.0	-4.0	0	0	0	0	-4.0				

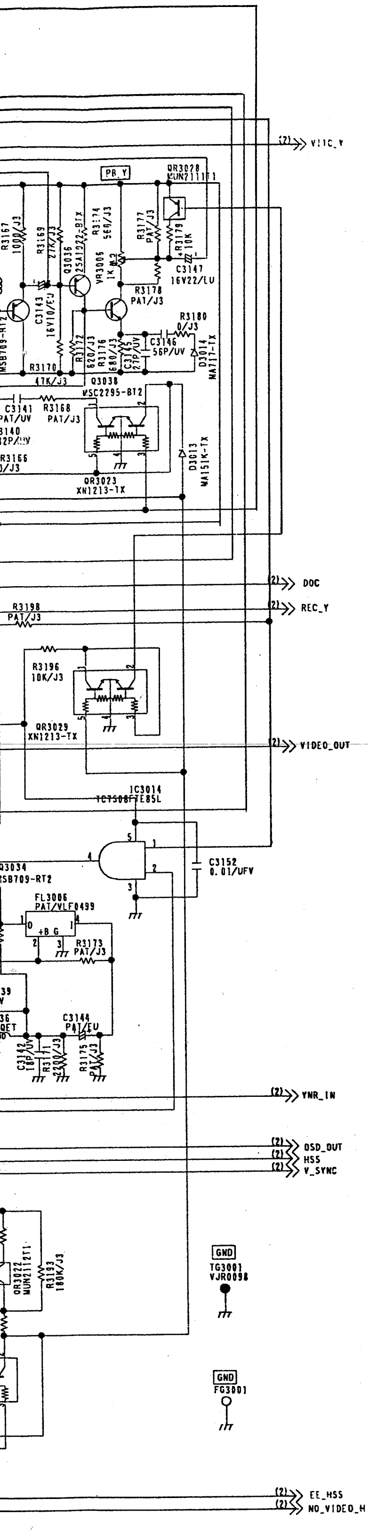
VIDEO 2 TRs DC VOLTAGE CHART

REF. NO.	Q8001			Q8002			Q8003			Q8004			Q8005			Q8006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	-12.0	-12.0	-11.3	-4.0	-0.2	-4.0	-1.8	-5.0	-2.4	-1.8	-5.0	-2.4	0	-5.0	-0.2	0	-5.0	0
PLAY	3.2	0.1	-4.0	-3.9	-2.1	-4.0	-1.7	-3.8	-2.3	-1.7	-1.7	-2.3	-4.0	-3.8	-3.5	0	0	-0.6
REF. NO.	Q8007			Q8008			Q8009			Q8010			Q8011			Q8013		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	-1.6	-5.0	-2.2	-2.3	-3.6	-3.0	-0.6	-4.4	-1.3	-5.0	-2.2	-4.4	-1.5	-4.0	-2.2	-1.6	0	-0.9
PLAY	-1.5	-3.8	-2.2	-2.2	-3.7	-3.0	-0.5	-3.9	-1.2	-3.0	-2.1	-4.0	-1.5	-3.6	-2.2	-1.6	0	-0.9
REF. NO.	Q8014			Q8015			Q8016			Q8017								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
REC	-0.2	0	-0.2	0	-0.4	0	0	0	-0.7	0.2	0	-2.1						
PLAY	-2.8	0	-2.2	0	0	-0.4	0	0	-0.6	-2.2	0	-1.6						
REF. NO.	QR8001			QR8002			QR8004			QR8005			QR8007			QR8008		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	0	-4.8	0	0	-3.8	-5.0	0	0	0	-3.9	0	0	-4.0	0	0	0	-3.7
PLAY	0	-2.4	0	0	0	-3.8	-4.0	-0.2	-2.0	0	-3.8	0	0	-4.0	0	0	-4.0	-0.2
REF. NO.	QR8009			QR8010			QR8011			QR8013								
MODE	E	C	B	E	C	B	E	C	B	1	2	3	4	5				
REC	-2.8	-3.8	-3.8	0	0	-3.8	0	0	-1.8	0	0	-1.9	0	-2.0				
PLAY	-3.0	-3.8	-4.0	0	0	-3.8	0	0	-1.8	0	0	-2.0	0	-2.0				
REF. NO.	QR8014																	
MODE	1	2	3	4	5													
REC	-2.0	-2.0	-2.0	0	-1.4													
PLAY	-2.0	-2.0	-2.0	0	-1.4													

VIDEO 3 SCHEMATIC DIAGRAM (E9)


E
D
C
B
A
1
2
3
4
5
6
7
8
PLAY_5V
HIBAND_H
EP_L
COLOR_H
ART_VHN
YNR_OUT
PICT_CONT
C_OUT
RF_Y
EP_H
UNREG-30V
TD_SMALL_H
OSD_CLK
OSD_DATA
OSD_CS
VIDEO_IN
YNR_OUT_NL
EE_H
VITC_MUTE
VITC_REC
H_SW
TD_W_L
VITC_Y
DOC
REC_Y
VIDEO_OUT
YNR_IN
OSD_OUT
HSS
V_SYNC
EE_HSS
NO_VIDE
IC3002 AN3916-LF
IC3003 AN3296S
IC3005 MN5554-001SD
IC3006 TC7S32FTE85L
IC3007 TC4W53FTE12L
IC3008 MC74HC4053FR
IC3009 MN1280-P
IC3011 NJM2233BMAT1
IC3012 PA1/TC7W08FTE12L
IC3013 PA1/TC7W08FTE12L
IC3014 TC7S08FTE85L
IC3017 PA1/TC7W08FTE12L
HB_SP_FRQ
HB_EP_FRQ
EP_FRQ
SP_FRQ
AGC_LEV
AGC
CAR_1
VITC_DC
PR_Y
GND
TG3001 VJR0098
TG3001
P3001
VJP3176B064
A
NO
B
PICT_CONT
1
V_GND
2
EP_H
HIBAND(H)
3
OSD_CLK
OSD_DATA
4
OSD_CS
T/D_W(L)
5
T/D_SMALL(H)
NO_VIDEO(H)
6
EE_HSS
7
EE(H)
8
DOC
9
PLAY_5V
COLOR(H)
10
V_SYNC
V_GND
11
V_GND
12
C_OUT
13
V_GND
RF_Y
14
V_GND
15
V_GND
YNR_IN
16
YNR_OUT
17
OSD_OUT
VITC_REC
18
EP(L)
VITC_MUTE
19
C_HSS
VITC_Y
20
V_GND
V_GND
21
HSS
UNREG-30V
22
REC_Y
V_12V
23
V_12V
V_5V
24
V_5V
25
V_GND
26
H_SW
VIDEO_OUT
27
YNR_OUT_NL
ART_V/H/N
28
V_GND
29
V_GND
30
V_GND
V_GND
31
V_GND
VIDEO_IN
32
+12V
+5V

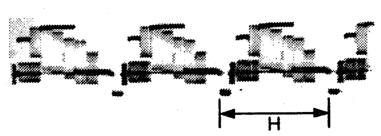
Ref No. 3000 Series.


(2) VIIC_Y
PR_Y
QR3028
MUN2111F1
R3167
1000/J3
R3169
27K/J3
Q3036
2SA1022-BTX
R3174
560/J3
R3177
PAT/J3
R3179
10K
C3147
16V22/LU
VR3005
1K
C3143
16V10/EU
R3178
PA1/J3
R3180
0/J3
C3146
56P/UV
D3014
MA717-TX
C3145
27P/UV
R3172
620/J3
R3176
680/J3
R3170
47K/J3
Q3038
MSC2295-BT2
C3141
PAT/UV
R3168
PAT/J3
R3166
D3013
MA151K-TX
QR3023
XN1213-TX
(2) DOC
(2) REC_Y
R3198
PAT/J3
R3196
10K/J3
QR3029
XN1213-TX
(2) VIDEO_OUT
IC3014
TC7S08FTE85L
C3152
0.01/UFV
Q3034
2SB709-RT2
FL3006
PAT/VLF0499
+B G
R3173
PAT/J3
C3144
PAT/EU
C3142
18P/UV
R3171
2200/J3
R3175
PAT/J3
(2) YNR_IN
(2) OSD_OUT
(2) HSS
(2) V_SYNC
QR3022
MUN2112T1
R3193
180K/J3
GND
TG3001
VJR0098
GND
FG3001
(2) EE_HSS
(2) NO_VIDEO_H

Ref No. 3000 Series.

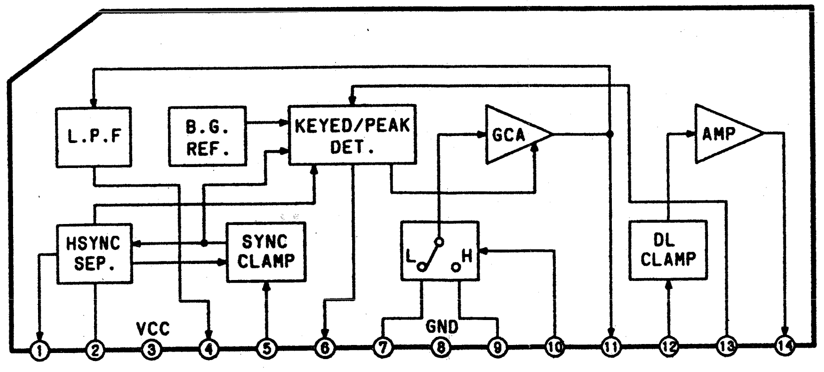
VIDEO 3 ICs DC VOLTAGE CHART

REF. NO.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	–0.4	–0.4	–2.8	–2.2	–2.0	–5.0	–2.8	–2.8	–2.1	–2.8	–3.3	–4.9	–2.1	0	–2.1	–0.6	–2.1	–2.0	–3.9	–2.0
PLAY	–0.4	–0.4	–2.8	–2.0	–1.9	–5.0	–2.8	–2.8	–2.7	–2.8	–3.3	–4.9	–2.1	0	–2.1	–0.6	–2.1	–1.9	–3.8	–2.0
REF. NO.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
REC	–2.8	0	–0.2	–0.2	0	0	–0.2	0	–0.1	0	2.2	0	–0.4	–1.7	–0.2	–5.0	–2.0	–2.4	0	–2.2
PLAY	–2.8	–4.0	–3.9	–4.9	0	–0.8	–4.8	–2.8	–2.5	–1.4	3.2	–2.7	–2.0	–2.3	–2.9	–0.2	–1.9	–2.4	0	–2.2
REF. NO.	IC3001																			
MODE	41	42																		
REC	–2.5	0																		
PLAY	–2.7	0																		
REF. NO.	IC3002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
REC	–3.7	–3.0	–5.0	–1.9	–1.5	–2.2	–2.9	0	–3.0	0	–2.7	–3.2	–3.1	–2.2						
PLAY	–3.7	–3.0	–5.0	–1.9	–1.5	–2.2	–2.9	0	–3.0	0	–2.7	–3.2	–3.1	–2.2						
REF. NO.	IC3003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
REC	0	–3.3	–4.1	–2.9	–0.2	–2.8	–0.2	–3.0	–2.3	–5.0	–4.8	–0.7	–0.1	–1.4	–3.8	–4.3				
PLAY	0	–3.4	–4.2	–3.0	–0.2	–2.9	–0.2	–3.0	–2.3	–5.1	–4.8	–0.7	–0.1	–1.5	–3.8	–4.4				
REF. NO.	IC3004																			
MODE	O	V	G																	
REC	–5.0	–5.0	0																	
PLAY	–5.0	–5.0	0																	
REF. NO.	IC3005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	–4.8	–5.0	–2.4	–2.3	–4.9	–4.0	–0.2	–0.4	–4.9	0	–1.0	–1.0	–1.7	–1.9	–0.6	–0.9	–5.0	–2.0	–2.0
PLAY	0	–4.8	–5.0	–2.4	–2.3	–4.9	–4.0	–0.2	–0.4	–4.9	0	–0.7	–1.0	–0.7	–1.9	–0.6	–0.9	–5.0	–1.7	–1.7
REF. NO.	IC3005																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	0	0	0	0	0	0	–4.5	–2.1	–2.2	–2.9	–4.8	–5.0								
PLAY	0	0	0	0	0	0	–4.5	–2.3	–2.2	–3.0	–4.9	–5.0								
REF. NO.	IC3006										IC3007									
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8		
REC	0	–4.0	0	–5.0	–5.0						–2.1	0	0	0	0	–2.0	–2.1	–5.0		
PLAY	–0.1	–4.0	0	–5.0	–5.0						–2.1	0	0	0	0	–2.0	–2.1	–5.0		
REF. NO.	IC3008										IC3009									
MODE	1	2	3	4	5	6	7	8	9		1	2	3	4	5	6	7	8	9	
REC	–0.7	–1.9	0	0	0	0	0	0	0		–1.6	–5.0	–5.0	–2.9	–0.3	–3.0	0	–1.0	0	
PLAY	–0.7	–1.9	0	0	0	0	0	0	0		–1.6	–5.0	–0.2	–3.0	–2.0	–2.3	0	–0.9	0	
REF. NO.	IC3010										IC3011									
MODE	I	G	D								1	2	3	4	5	6	7	8		
REC	–12.0	0	–5.0								–3.0	–4.0	–2.9	–0.4	–0.4	–5.0	–2.2	0		
PLAY	–12.0	0	–5.1								–3.0	–4.0	–2.9	–0.2	–0.3	–5.0	–2.2	0		



TP3001 2.0Vp-p REC/PALY

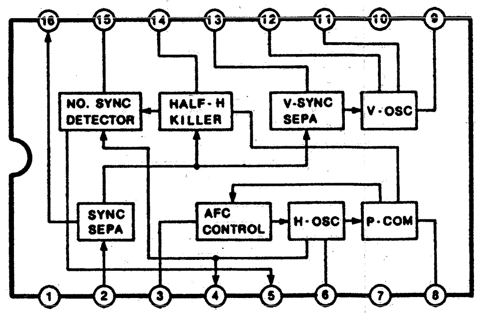
IC3501 AN3916-LF


L.P.F
B.G.
REF.
KEYED/PEAK
DET.
GCA
AMP
HSYNC
SEP.
SYNC
CLAMP
L
H
DL
CLAMP
VCC
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14

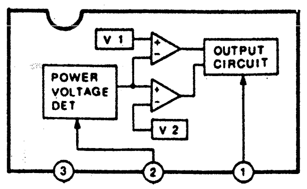
VIDEO 3 TRs DC VOLTAGE CHART

REF. NO.	Q3001			Q3002			Q3003			Q3004			Q3005			Q3006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	20.0	30.0	20.0	–2.8	0	–2.2	–2.3	–5.0	–2.9	–6.7	–12.0	–2.2	–2.9	–5.0	–3.0	–1.6	–5.0	–1.3
PLAY	20.0	30.0	20.0	–2.8	0	–2.2	–2.3	–5.0	–2.9	–6.7	–12.0	–7.4	–2.9	–5.0	–3.0	–1.6	–5.0	–1.3
REF. NO.	Q3007			Q3008			Q3009			Q3010			Q3011			Q3012		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	–1.0	–5.0	–1.6	0	–0.2	–0.2	0	–0.2	–0.2	–1.2	0	–0.5	0	–0.5	0	0	–0.5	–0.5
PLAY	–1.0	–5.0	–1.6	–0.8	–0.4	–1.5	–3.8	–4.9	–4.5	–1.1	0	–0.4	0	–0.3	0	0	–0.2	–2.5
REF. NO.	Q3013			Q3014			Q3015			Q3016			Q3017			Q3018		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	0	–0.7	0	–4.0	0	–2.8	–5.0	–2.9	–2.5	0	–1.9	–2.2	–5.0	–2.8	–1.9	–5.0	–2.5
PLAY	0	0	–0.7	0	–0.2	0	–2.7	–5.0	–2.9	–2.5	0	–1.9	–2.1	–5.0	–2.7	–1.9	–5.0	–2.5
REF. NO.	Q3019			Q3020			Q3021			Q3022			Q3023			Q3024		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	–2.0	–5.0	–2.6	–1.4	0	–0.7	–0.8	–5.0	–1.4	–1.5	–5.0	–2.2	–3.9	–12.0	–4.5	–1.4	–5.0	–2.0
PLAY	–1.9	–5.0	–2.6	–1.4	0	–0.7	–0.7	–5.0	–1.4	–1.4	–5.0	–2.0	–4.2	–12.0	–4.5	–1.3	–5.0	–1.9
REF. NO.	Q3025			Q3026			Q3027			Q3028			Q3029			Q3030		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	–1.5	–4.5	–1.9	–4.9	–4.9	–4.3	–4.3	–4.9	–4.3	–2.8	0	–2.2	–3.0	0	–3.0	0	–0.2	–0.1
PLAY	–1.2	–4.5	–1.9	–4.9	–4.9	–4.4	–1.3	–4.9	–4.4	–2.8	0	–2.2	–3.0	0	–3.0	–1.5	–3.3	–2.3
REF. NO.	Q3031			Q3033			Q3034			Q3035			Q3036			Q3038		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	–0.2	0	0	0	–0.2	–0.2	–0.2	0	0	–0.2	0	0	–0.2	0	–0.1	0	–0.2	0
PLAY	–2.2	0	–1.5	–1.5	–3.4	–2.2	–1.5	0	–0.8	–2.1	0	–1.5	–3.9	–1.2	–3.2	–0.5	–4.1	–1.2
REF. NO.	QR3001			QR3003			QR3006			QR3007			QR3008			QR3009		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	–0.3	–0.7	0	–2.9	–0.7	0	0	–5.0	0	–4.9	–0.3	0	0	–5.3	0	0	–4.0
PLAY	0	–0.2	–0.7	0	–2.6	–0.7	0	0	–5.0	0	–4.9	–0.4	0	–0.2	–5.3	0	0	–4.0
REF. NO.	QR3011			QR3012			QR3014			QR3015			QR3019			QR3020		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	–12.0	–12.0	0	0	0	–5.0	0	0	–5.0	0	0	–5.0	0	–0.1	–5.0	0	–3.8	–0.7
PLAY	–12.0	–12.0	0	0	0	–5.0	0	0	–5.0	0	0	–5.0	0	–0.1	–5.0	0	–3.8	–0.7
REF. NO.	QR3021			QR3022			QR3023						QR3024					
MODE	E	C	B	E	C	B	1	2	3	4	5		1	2	3	4	5	
REC	0	–0.4	0	–5.1	–2.0	–5.1	–3.9	–0.1	–4.1	0	0.1		–0.7	0	–0.1	–0.7	–5.0	
PLAY	0	–0.4	0	–5.0	–2.0	–5.1	–3.7	–0.1	–4.1	0	0.1		–0.7	0	–0.1	–0.7	–5.0	

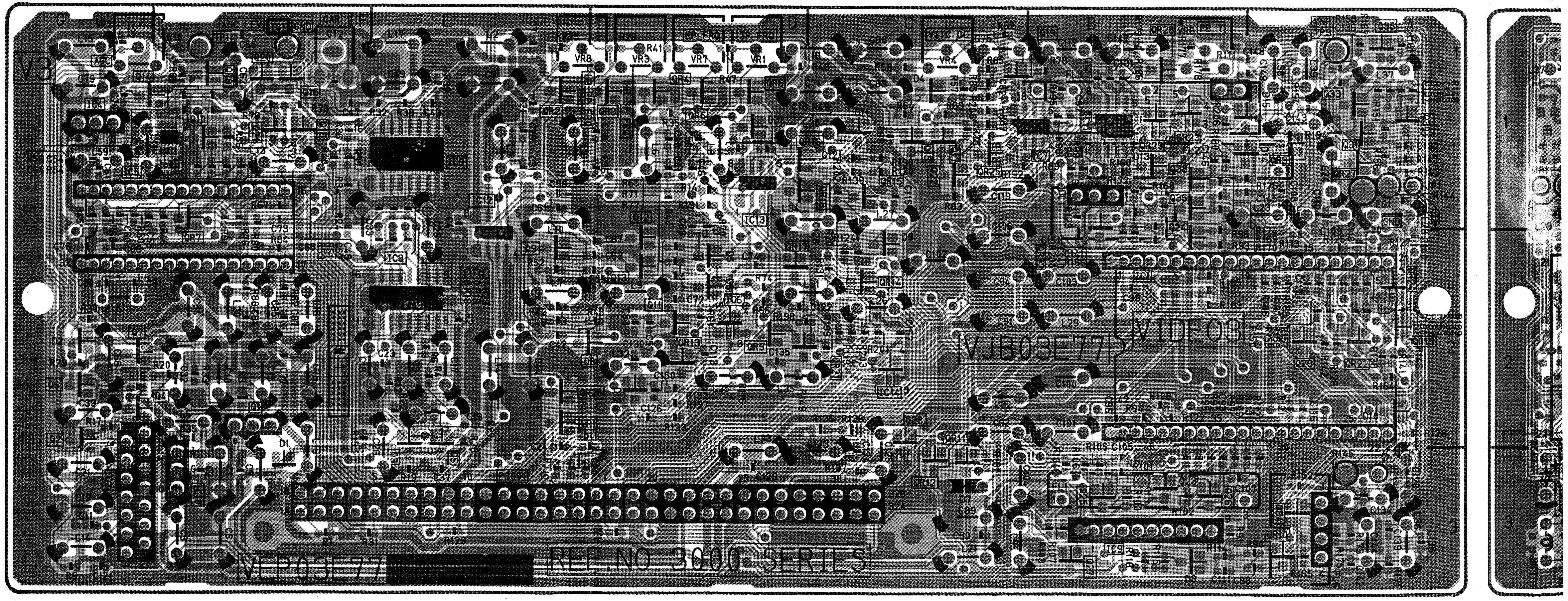
IC3506 AN3296S


16
15
14
13
12
11
10
9
NO. SYNC
DETECTOR
HALF-H
KILLER
V-SYNC
SEPA
V-OSC
SYNC
SEPA
AFC
CONTROL
H-OSC
P-COM
1
2
3
4
5
6
7
8

IC3507 MN1280-P


V 1
V 2
POWER
VOLTAGE
DET
OUTPUT
CIRCUIT
3
2
1

VIDEO 3 C.B.A. (E9)

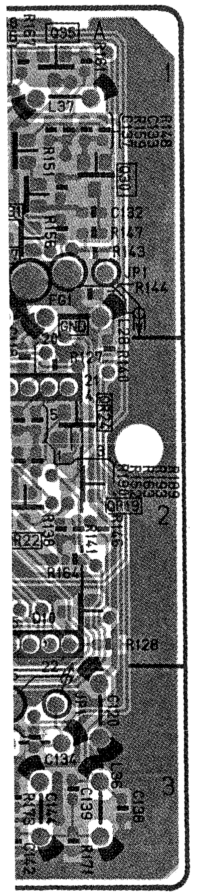

VJB03E77
VIDEO3
VEP03E77
REF.NO 3000 SERIES
V3

FOIL SIDE

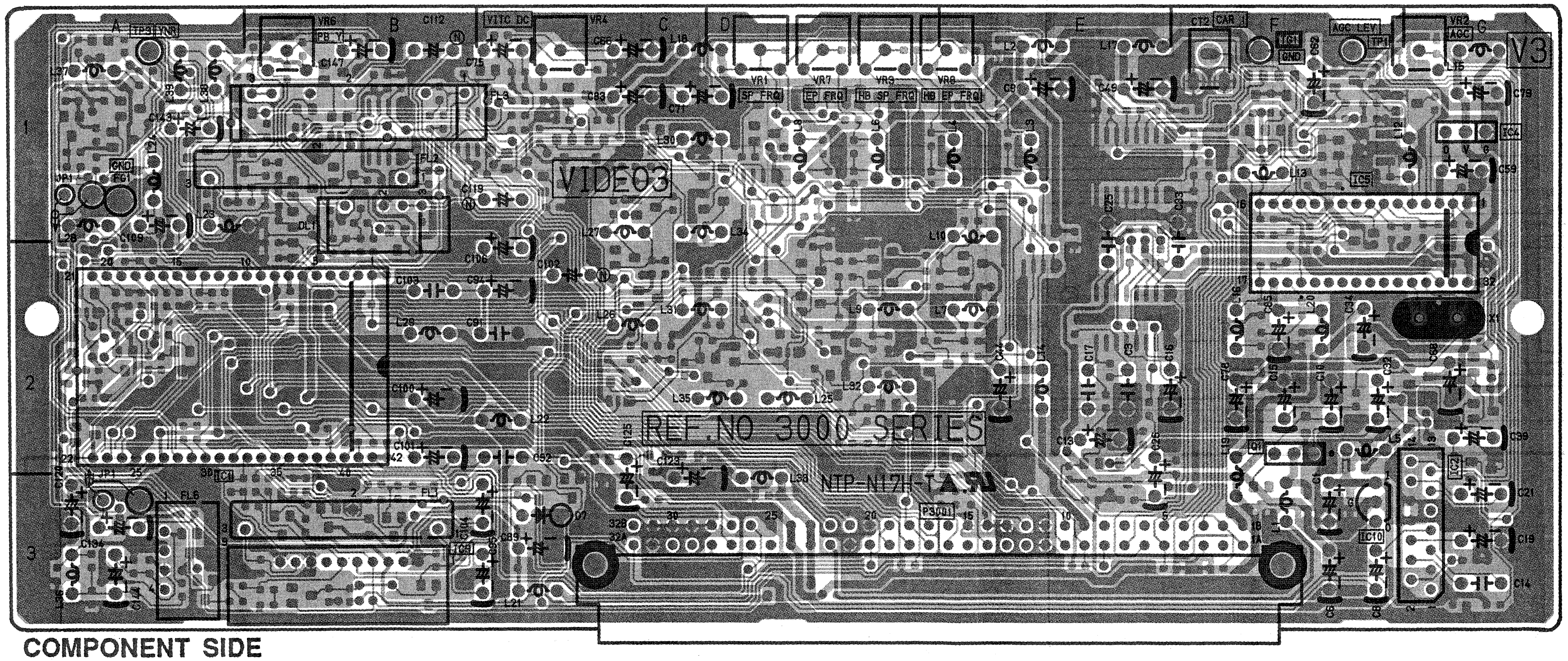
COMP

VIDEO 3 C.B.A.		
Transisitors		
Q3001	F-2	Ⓕ/Ⓒ
Q3002	G-2	Ⓕ
Q3003	E-3	Ⓕ
Q3004	G-2	Ⓕ
Q3005	E-3	Ⓕ
Q3006	G-2	Ⓕ
Q3007	G-2	Ⓕ
Q3008	D-2	Ⓕ
Q3009	E-2	Ⓕ
Q3010	F-1	Ⓕ
Q3011	D-2	Ⓕ
Q3012	D-1	Ⓕ
Q3013	D-2	Ⓕ
Q3014	G-1	Ⓕ
Q3015	C-1	Ⓕ
Q3016	F-1	Ⓕ
Q3017	C-1	Ⓕ
Q3018	F-1	Ⓕ
Q3019	B-1	Ⓕ
Q3020	F-1	Ⓕ
Q3021	F-1	Ⓕ
Q3022	C-1	Ⓕ
Q3023	B-3	Ⓕ
Q3024	B-1	Ⓕ
Q3025	B-3	Ⓕ
Q3026	B-3	Ⓕ
Q3027	B-3	Ⓕ
Q3028	C-2	Ⓕ
Q3029	A-2	Ⓕ
Q3030	A-1	Ⓕ
Q3031	A-1	Ⓕ
Q3033	A-1	Ⓕ
Q3034	A-3	Ⓕ
Q3035	A-1	Ⓕ
Q3036	B-1	Ⓕ
Q3038	B-1	Ⓕ
Transisitor-Resistors		
QR3001	E-2	Ⓕ
QR3002	E-1	Ⓕ
QR3003	D-1	Ⓕ
QR3004	D-1	Ⓕ
QR3005	D-1	Ⓕ
QR3006	D-1	Ⓕ
QR3007	F-2	Ⓕ
QR3008	F-1	Ⓕ
QR3009	D-2	Ⓕ
QR3010	A-3	Ⓕ
QR3011	C-2	Ⓕ
QR3012	C-3	Ⓕ
QR3013	D-2	Ⓕ
QR3014	C-2	Ⓕ
QR3015	C-1	Ⓕ
QR3016	D-1	Ⓕ
QR3018	C-1	Ⓕ
QR3019	A-2	Ⓕ
QR3020	E-2	Ⓕ
QR3021	C-2	Ⓕ
QR3022	A-2	Ⓕ
QR3023	B-1	Ⓕ
QR3024	A-2	Ⓕ
QR3025	C-1	Ⓕ
QR3027	A-1	Ⓕ
QR3028	B-1	Ⓕ
QR3029	B-1	Ⓕ
QR3031	A-1	Ⓕ
QR3032	B-2	Ⓕ
Integrated Circuits		
IC3001	B-2	Ⓕ/Ⓒ
IC3002	G-3	Ⓕ/Ⓒ
IC3003	E-2	Ⓕ
IC3004	G-1	Ⓕ/Ⓒ
IC3005	G-1	Ⓕ/Ⓒ
IC3006	D-2	Ⓕ
IC3007	B-1	Ⓕ
IC3008	E-1	Ⓕ
IC3009	B-3	Ⓕ/Ⓒ
IC3010	F-3	Ⓕ/Ⓒ
IC3011	B-1	Ⓕ
IC3012	E-1	Ⓕ
IC3013	D-1	Ⓕ
IC3014	C-2	Ⓕ
Test Points		
TP3001	F-1	Ⓕ/Ⓒ
TP3003	A-1	Ⓕ/Ⓒ
TPG3001	F-1	Ⓕ/Ⓒ
Adjustments		
VR3001	D-1	Ⓕ/Ⓒ
VR3002	G-1	Ⓕ/Ⓒ
VR3003	D-1	Ⓕ/Ⓒ
VR3004	C-1	Ⓕ/Ⓒ
VR3006	B-1	Ⓕ/Ⓒ
VR3007	D-1	Ⓕ/Ⓒ
VR3008	E-1	Ⓕ/Ⓒ
CT3002	F-1	Ⓕ/Ⓒ
Connector		
P3001	E-3	Ⓕ/Ⓒ

ADDRESS INFORMATION
Ⓒ......COMPONENT SIDE
Ⓕ......FOIL SIDE

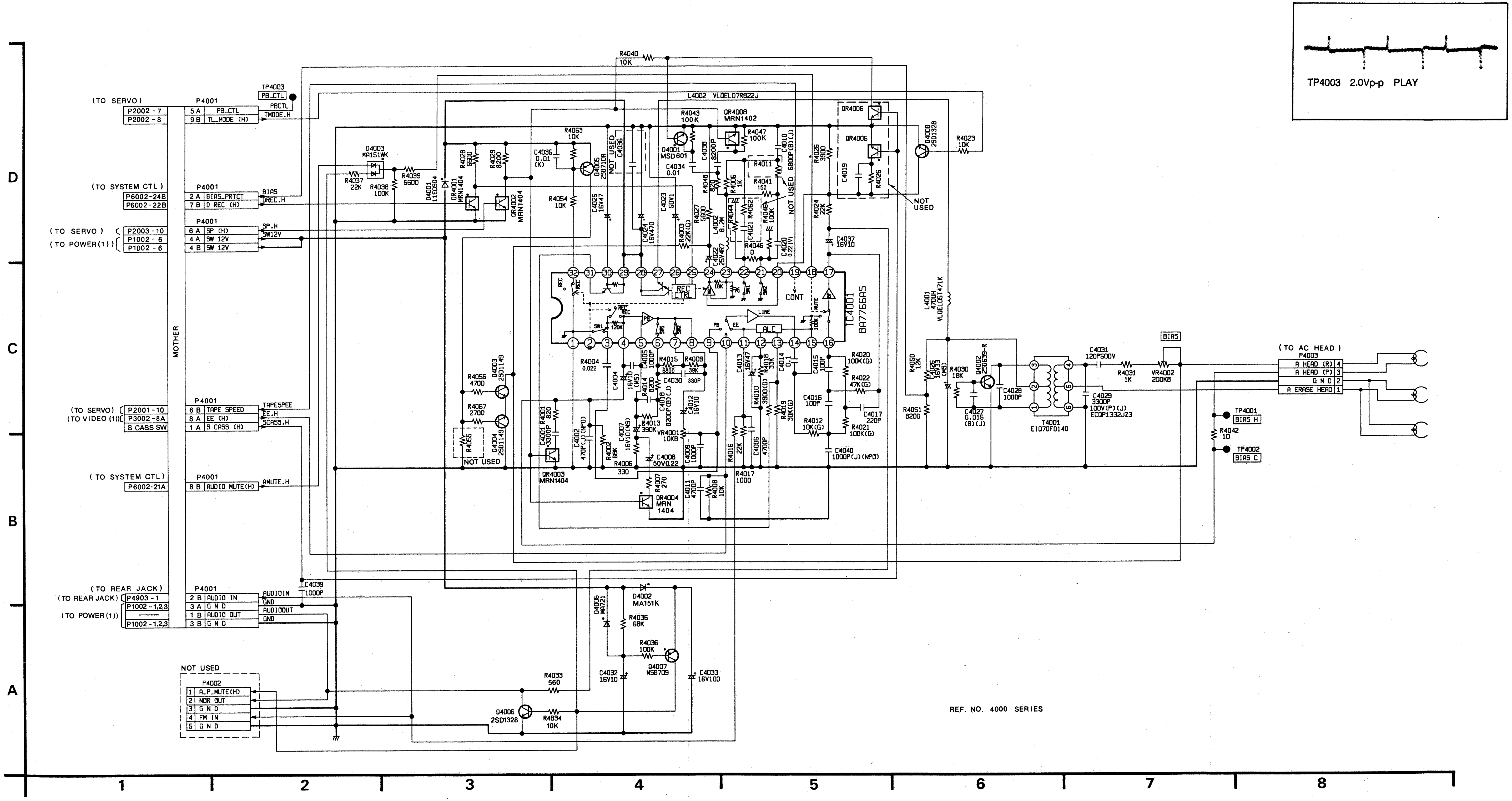


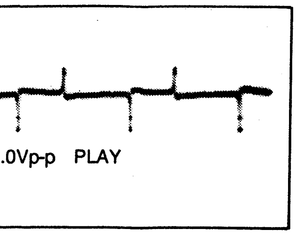
OIL SIDE

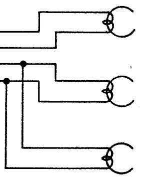

A
B
C
D
E
F
G
1
2
3
V3
VIDEO3
REF.NO 3000 SERIES
NTP-N17H-TA
TPS TNR
VR6
FB YL
VTR DC
VR4
VR1 SP FRQ
VR7 EP FRQ
VR9 HB SP FRQ
VR8 HB EP FRQ
CT2 CAR
AGC LEV
TP1
VR2 AGC
GND
P3001
IC10

COMPONENT SIDE

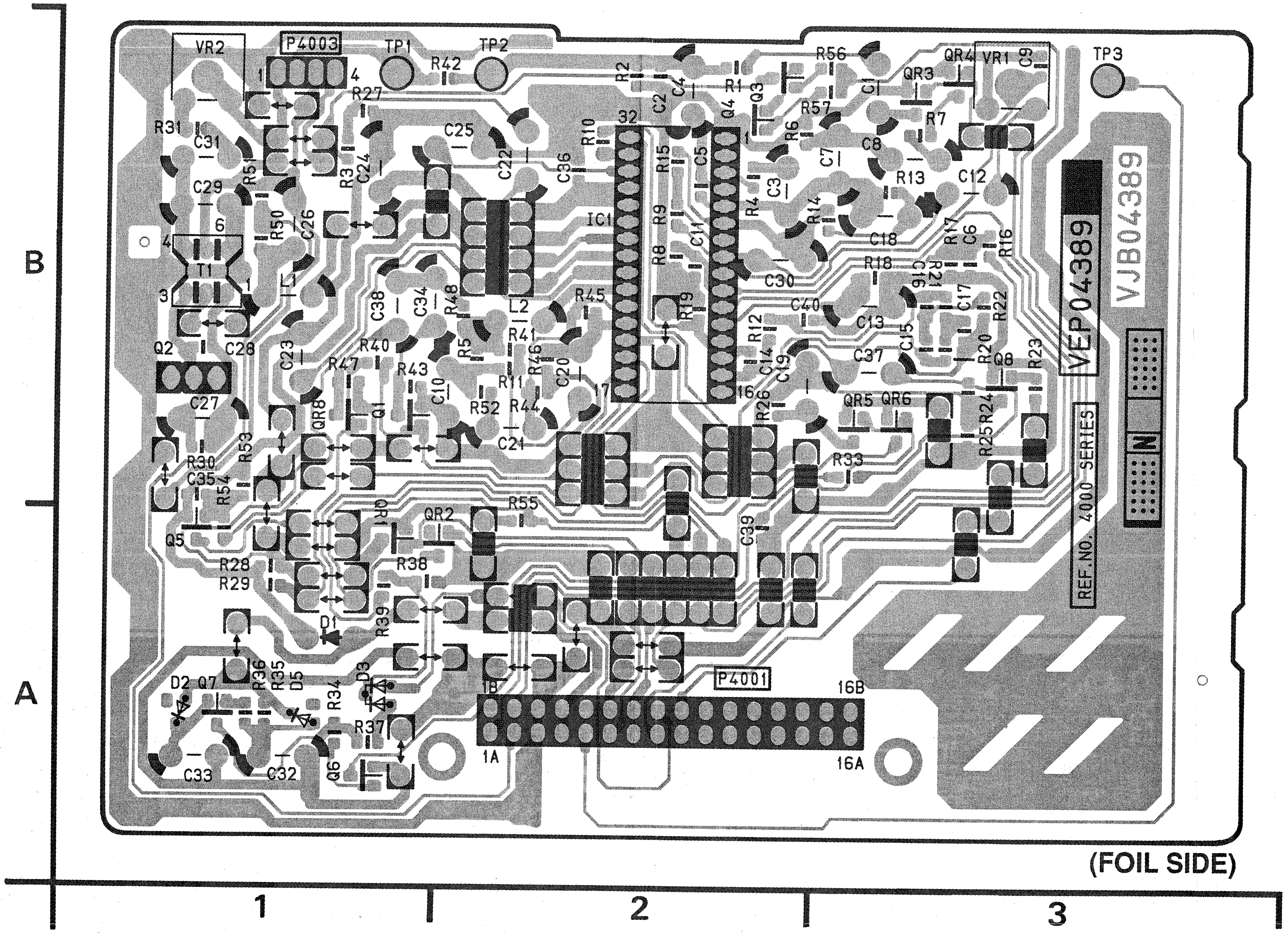
AUDIO SCHEMATIC DIAGRAM (E11)


TP4003 2.0Vp-p PLAY
(TO SERVO)
P2002 - 7
P2002 - 8
P4001
5 A PB_CTL
9 B TL_MODE (H)
TP4003
PB_CTL
PBCTL
TMODE.H
(TO SYSTEM CTL)
P6002-24B
P6002-22B
2 A BIAS_PRTCT
7 B D REC (H)
BIAS
DREC.H
(TO SERVO)
(TO POWER(1))
P2003 - 10
P1002 - 6
6 A SP (H)
4 A SW 12V
4 B SW 12V
SP.H
SW12V
MOTHER
(TO SERVO)
(TO VIDEO (1))
P2001 - 10
P3002 - 8A
S CASS SW
6 B TAPE SPEED
8 A EE (H)
1 A S CASS (H)
TAPESPEE
EE.H
SCASS.H
(TO SYSTEM CTL)
P6002-21A
8 B AUDIO MUTE(H)
AMUTE.H
(TO REAR JACK)
P4903 - 1
P1002 - 1,2,3
(TO POWER (1))
2 B AUDIO IN
3 A GND
1 B AUDIO OUT
3 B GND
AUDIOIN
GND
AUDIOOUT
C4039 1000P
NOT USED
P4002
1 A_P_MUTE(H)
2 NOR OUT
3 GND
4 FM IN
5 GND
R4040 10K
L4002 VLQEL07R822J
R4043 100K
QR4008 MRN1402
Q4001 MSD601
R4047 100K
R4053 10K
C4035 0.01 (K)
Q4005 2SB710R
NOT USED C4036
C4034 0.01
C4038 8200P
C4010 6800P(B)(J)
R4011
R4041 150
R4025 3900
QR4006
QR4005
C4019
R4026
NOT USED
Q4008 2SD1328
R4023 10K
D4003 MA151WK
R4037 22K
R4038 100K
R4039 5600
D4001 11EQS04
QR4001 MRN1404
R4028 5600
R4029 8200
QR4002 MRN1404
R4054 10K
C4025 16V47
C4024 16V470
C4023 50V1
R4003 22K(G)
R4027 5600
R4048 820
R4005 1K
L4001 8.2M
C4022 25V4R7
R4044
R4052
C4021
R4045 0
R4046 100K
C4020 0.22(V)
NOT USED
R4024 22K
C4037 16V10
REC
REC CTRL
SW1
SW2
CONT
MUTE
LINE
PB
EE
ALC
IC4001 BA7766AS
L4001 470UH VLQEL05T471K
R4004 0.022
C4005 1000P
R4015 6800
R4009 39K
C4030 330P
C4004 16V10 (MS)
R4014 8200
C4018 8200P(B)(J)
C4012 16V10
C4013 16V47
R4018 33K
C4014 0.1
C4015 100P
R4020 100K(G)
R4022 47K(G)
C4016 100P
R4012 10K(G)
R4021 100K(G)
C4017 220P
C4040 1000P(J)(NPO)
R4010 3900(G)
R4019 30K(G)
C4006 4700P
R4016 22K
R4017 1000
R4056 4700
Q4003 2SD1149
R4057 2700
Q4004 2SD1149
R4055
NOT USED
R4001 820
C4001 3300P
QR4003 MRN1404
C4002 470P(J)(NPO)
R4002 68K
C4007 16V10(MS)
R4013 390K
VR4001 10KB
R4006 330
C4008 50V0.22
C4009 1000P
R4007 270
QR4004 MRN 1404
C4011 470P
R4008 10K
R4050 12K
C4026 16V33 (MS)
R4051 8200
R4030 18K
Q4002 2SD639-R
C4027 0.015 (B)(J)
C4028 1000P
T4001 EI070F014Q
C4031 120P500V
R4031 1K
BIAS
VR4002 200KB
C4029 3300P 100V(P)(J) ECQP1332JZ3
(TO AC HEAD)
P4003
A HEAD (R) 4
A HEAD (P) 3
GND 2
A ERASE HEAD 1
TP4001 BIAS H
R4042 10
TP4002 BIAS C
D4005 MA721
D4002 MA151K
R4035 68K
R4036 100K
Q4007 MSB709
C4032 16V10
C4033 16V100
R4033 560
Q4006 2SD1328
R4034 10K
REF. NO. 4000 SERIES
D
C
B
A
1
2
3
4
5
6
7
8





AUDIO C.B.A. (E11)


VR2
P4003
TP1
TP2
TP3
VR1
QR4
QR3
IC1
T1
L1
L2
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
QR1
QR2
QR5
QR6
QR8
D1
D2
D3
D5
P4001
1A
1B
16A
16B
VEP04389
VJB04389
REF. NO. 4000 SERIES
N
B
A
1
2
3

(FOIL SIDE)

AUDIO C.B.A.		
Transistors		
Q4001	B-1	Ⓕ
Q4002	B-1	Ⓕ
Q4003	B-2	Ⓕ
Q4004	B-2	Ⓕ
Q4005	A-1	Ⓕ
Q4006	A-1	Ⓕ
Q4007	A-1	Ⓕ
Q4008	B-3	Ⓕ
Transistor-Resistors		
QR4001	A-1	Ⓕ
QR4002	A-1	Ⓕ
QR4003	B-3	Ⓕ
QR4004	B-3	Ⓕ
QR4005	B-3	Ⓕ
QR4006	B-3	Ⓕ
QR4008	B-1	Ⓕ
Integrated Circuit		
IC4001	B-2	Ⓕ
Test Points		
TP4001	B-1	Ⓕ
TP4002	B-2	Ⓕ
TP4003	B-3	Ⓕ
Adjustments		
VR4001	B-3	Ⓕ
VR4002	B-1	Ⓕ
Connectors		
P4001	A-2	Ⓕ
P4003	B-1	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

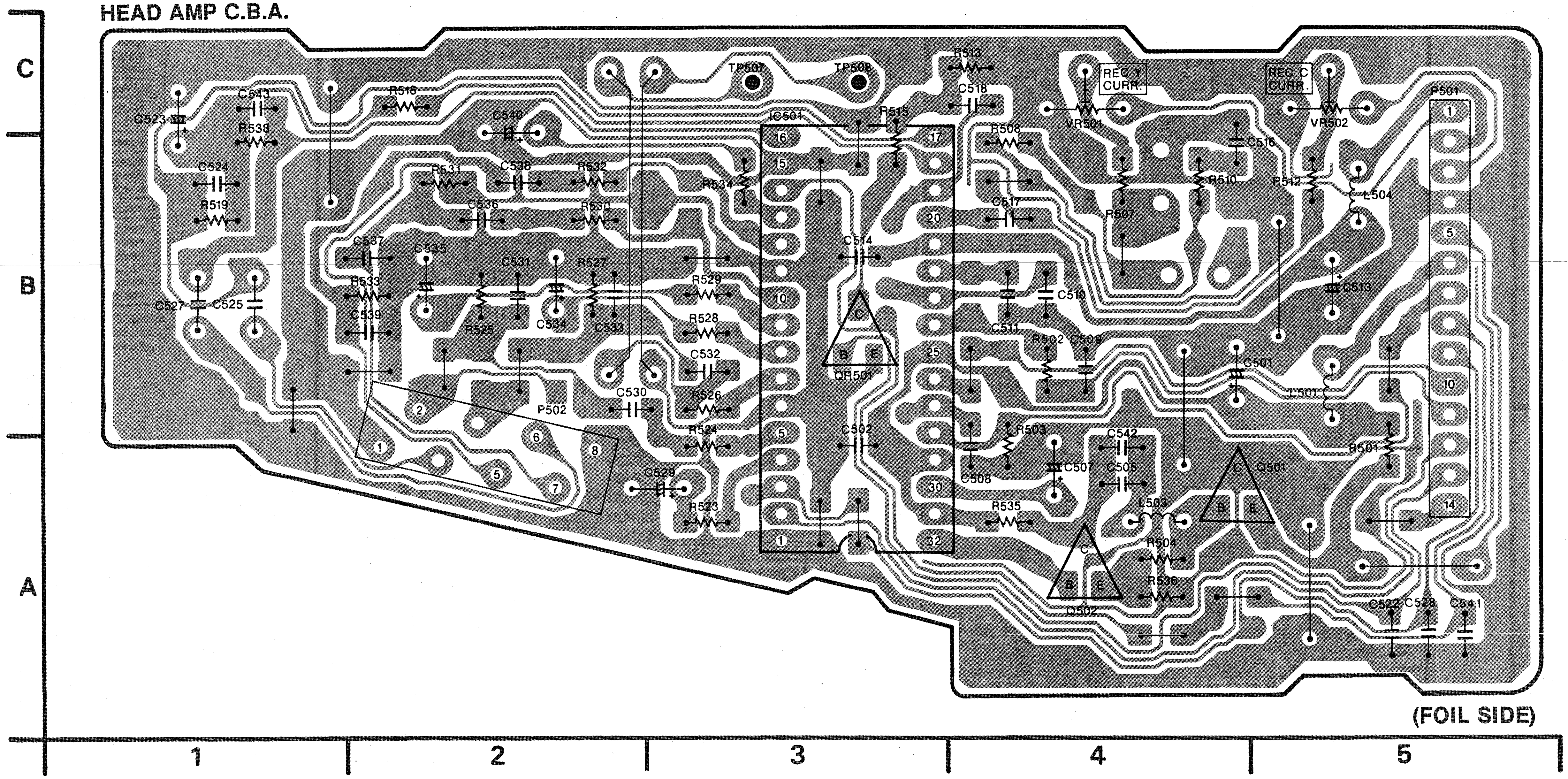
AUDIO ICs DC VOLTAGE CHART

REF. NO.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
REC	0	10.8	0	2.0	2.0	2.0	2.0	2.0	0	4.9	0	0	9.6	5.5	5.5	5.4	5.5	0	0.7	0
PLAY	0	8.1	0	2.0	2.0	2.0	2.0	2.0	0	0.4	0	0	9.5	5.5	5.5	5.4	5.5	0	0.7	0
REF. NO.	IC4001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
REC	0	0	0.6	5.6	0.1	11.4	10.0	11.6	11.6	11.5	10.8	11.5								
PLAY	0	0	0.6	5.6	10.7	0	0	12.0	12.0	11.5	10.7	0								

AUDIO TRs DC VOLTAGE CHART

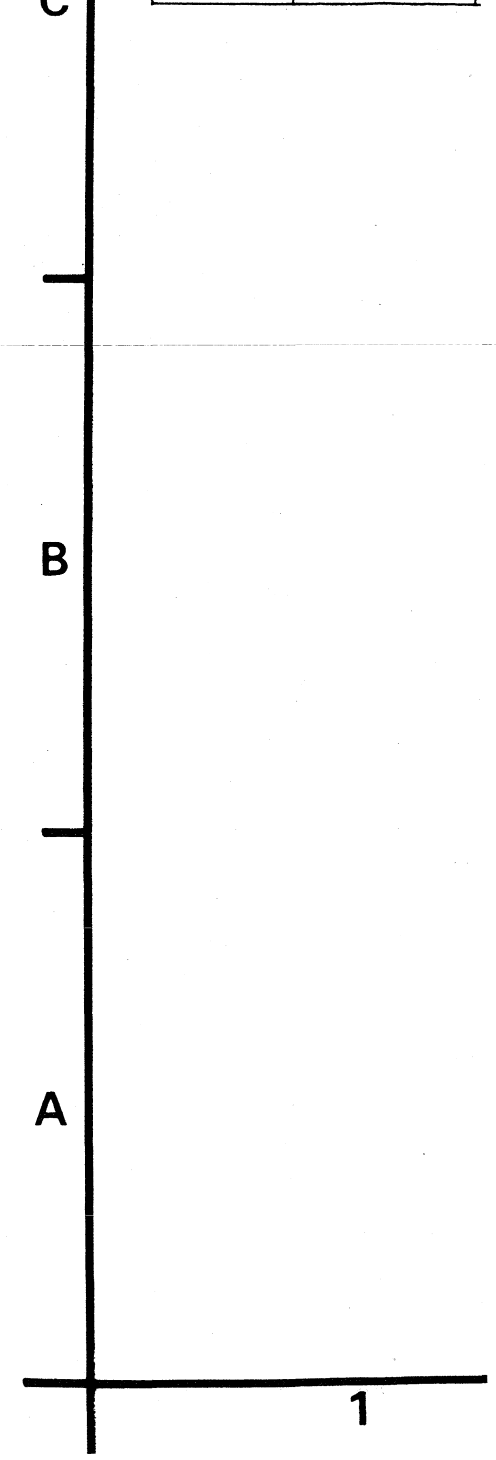
REF. NO.	Q4001			Q4002			Q4003			Q4004			Q4005			Q4006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	0	0	0	9.4	−1.2	−12.3	0	−30.2	−12.5	0	0	11.6	−30.0	11.5	0	0	−0.1
PLAY	0	0	0	0	0	0	0	0	0.7	0	0	0.1	11.6	11.6	10.9	0	0	−0.1
REF. NO.	Q4007			Q4008														
MODE	E	C	B	E	C	B												
REC	11.7	−0.1	11.7	0	0	0												
PLAY	11.8	−0.1	11.7	0	0	0												
REF. NO.	QR4001			QR4002			QR4003			QR 4004			QR4005			QR4006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
REC	0	0.1	4.9	0	0	4.4	0	0.1	0	0	0	0	0	0	4.3	0	0	4.3
PLAY	0	10.7	0	0	0	4.4	0	0	0	0	0	0	0	0	4.3	0	0	4.3
REF. NO.	QR4008																	
MODE	E	C	B															
REC	0	0	0															
PLAY	0	0	0															

HEAD AMP C.B.A. (E12)

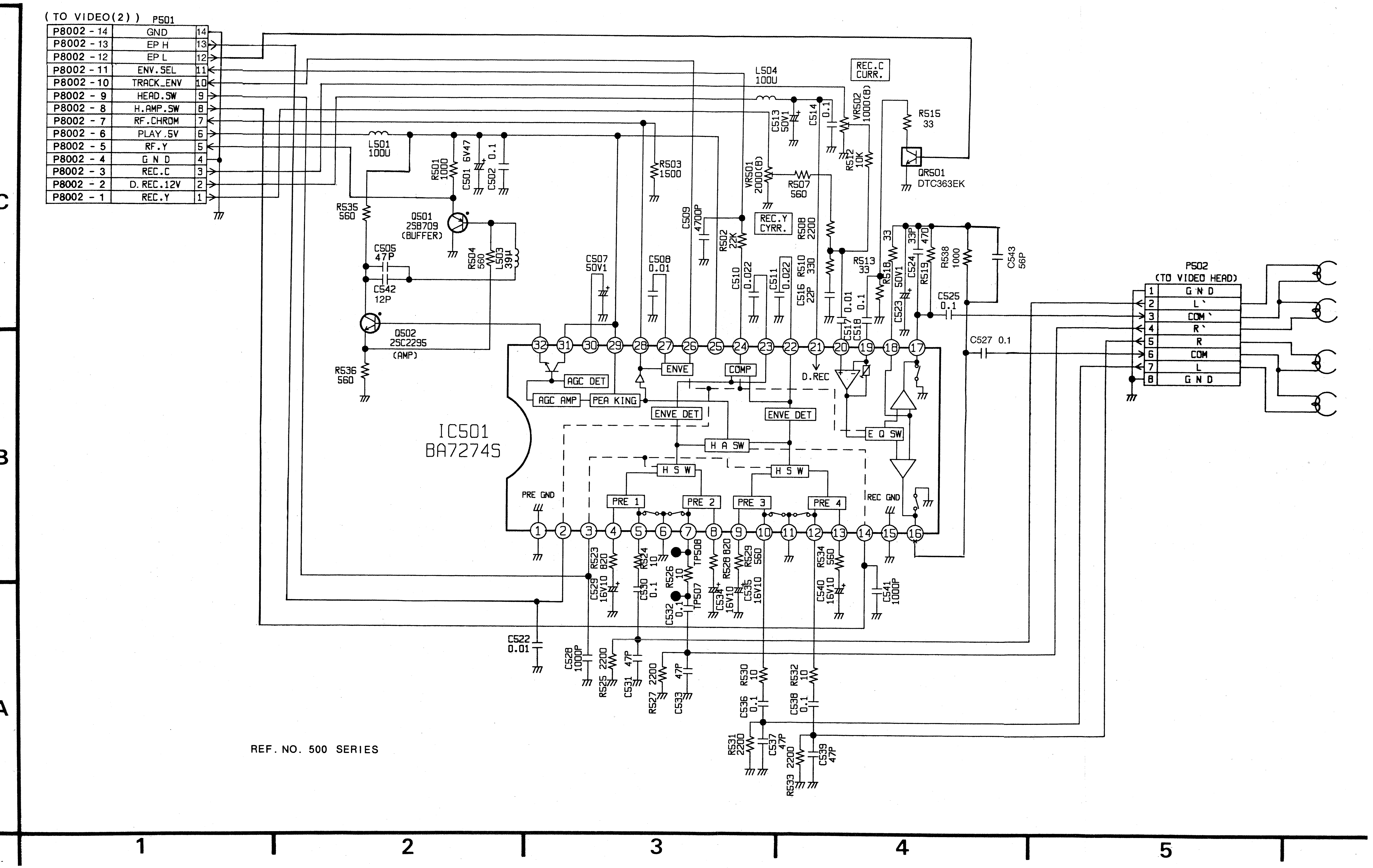

HEAD AMP C.B.A.
C
B
A
1
2
3
4
5
(FOIL SIDE)
C523
C543
R538
R518
C540
TP507
TP508
R513
C518
R515
IC501
16
17
15
20
10
25
5
30
1
32
R508
C517
C514
C510
C511
R502
C509
REC Y CURR.
REC C CURR.
VR501
VR502
C516
R510
R507
R512
L504
P501
1
5
10
14
C513
C501
L501
R501
Q501
C
B
E
QR501
C
B
E
C524
R519
R531
C538
R532
R534
C536
R530
C537
C535
C531
R527
R533
C539
R525
C534
C533
R529
R528
C532
C527
C525
P502
1
2
5
6
7
8
C530
R526
R524
C529
R523
C502
R503
C508
C507
C542
C505
R535
L503
R504
R536
Q502
C
B
E
C522
C528
C541

HEAD AMP SCHEMATI

(TO VIDEO(2))	P501
P8002 - 14	GND
P8002 - 13	EP H
P8002 - 12	EP L
P8002 - 11	ENV.SEL
P8002 - 10	TRACK_ENV
P8002 - 9	HEAD.SW
P8002 - 8	H.AMP.SW
P8002 - 7	RF.CHROM
P8002 - 6	PLAY.5V
P8002 - 5	RF.Y
P8002 - 4	G N D
P8002 - 3	REC.C
P8002 - 2	D. REC.12V
P8002 - 1	REC.Y

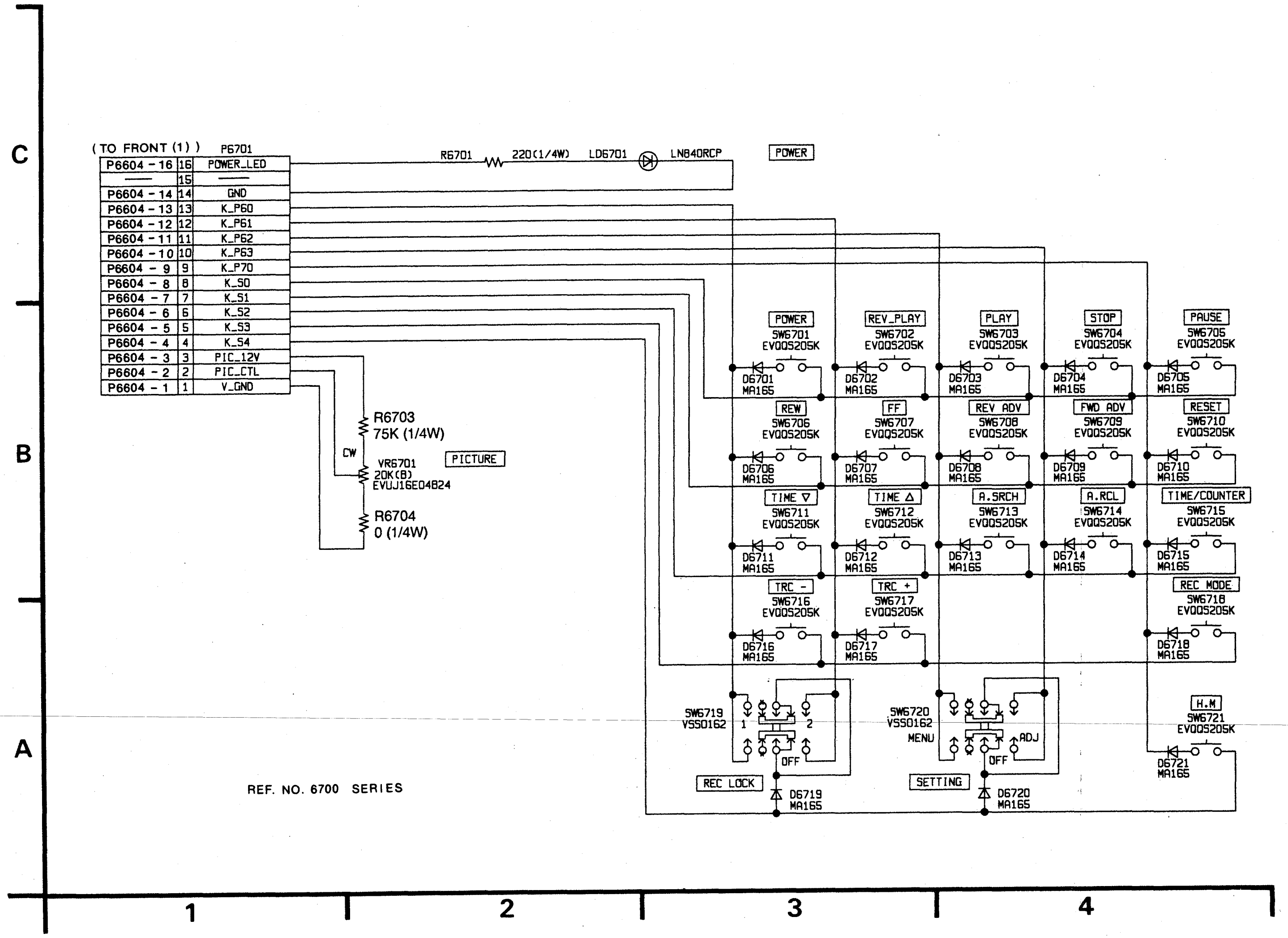


EAD AMP SCHEMATIC DIAGRAM (E12)


(TO VIDEO(2))
P501
P8002 - 14 GND 14
P8002 - 13 EP H 13
P8002 - 12 EP L 12
P8002 - 11 ENV.SEL 11
P8002 - 10 TRACK_ENV 10
P8002 - 9 HEAD.SW 9
P8002 - 8 H.AMP.SW 8
P8002 - 7 RF.CHROM 7
P8002 - 6 PLAY.5V 6
P8002 - 5 RF.Y 5
P8002 - 4 G N D 4
P8002 - 3 REC.C 3
P8002 - 2 D.REC.12V 2
P8002 - 1 REC.Y 1
L501 100U
R501 1000
C501 6V47
C502 0.1
R535 560
Q501 2SB709 (BUFFER)
C505 47P
C542 12P
R504 560
L503 39µ
Q502 2SC2295 (AMP)
R536 560
C507 50V1
C508 0.01
R503 1500
C509 4700P
R502 22K
VR501 2000(B)
R507 560
REC.Y CYRR.
R508 2200
R510 330
C510 0.022
C511 0.022
C516 22P
L504 100U
C513 50V1
C514 0.1
VR502 1000(B)
R512 10K
REC.C CURR.
R515 33
QR501 DTC363EK
R513 33
R518 33
C517 0.01
C518 0.1
C523 50V1
C524 33P
R519 470
R538 1000
C543 56P
C525 0.1
C527 0.1
D.REC
AGC DET
AGC AMP
PEA KING
ENVE
COMP
ENVE DET
ENVE DET
H A SW
H S W
H S W
E Q SW
PRE 1
PRE 2
PRE 3
PRE 4
PRE GND
REC GND
IC501 BA7274S
R523 820
C529 16V10
R524 10
C530 0.1
R526 10
TP508
TP507
C532 0.1
C534
R528 820
R529 560
C535 16V10
R534 560
C540 16V10
C541 1000P
C522 0.01
C528 1000P
R525 2200
C531 47P
R527 2200
C533 47P
R530 10
C536 0.1
R531 2200
C537 47P
R532 10
C538 0.1
R533 2200
C539 47P
P502 (TO VIDEO HEAD)
1 G N D
2 L`
3 COM`
4 R`
5 R
6 COM
7 L
8 G N D
C
B
A
1
2
3
4
5

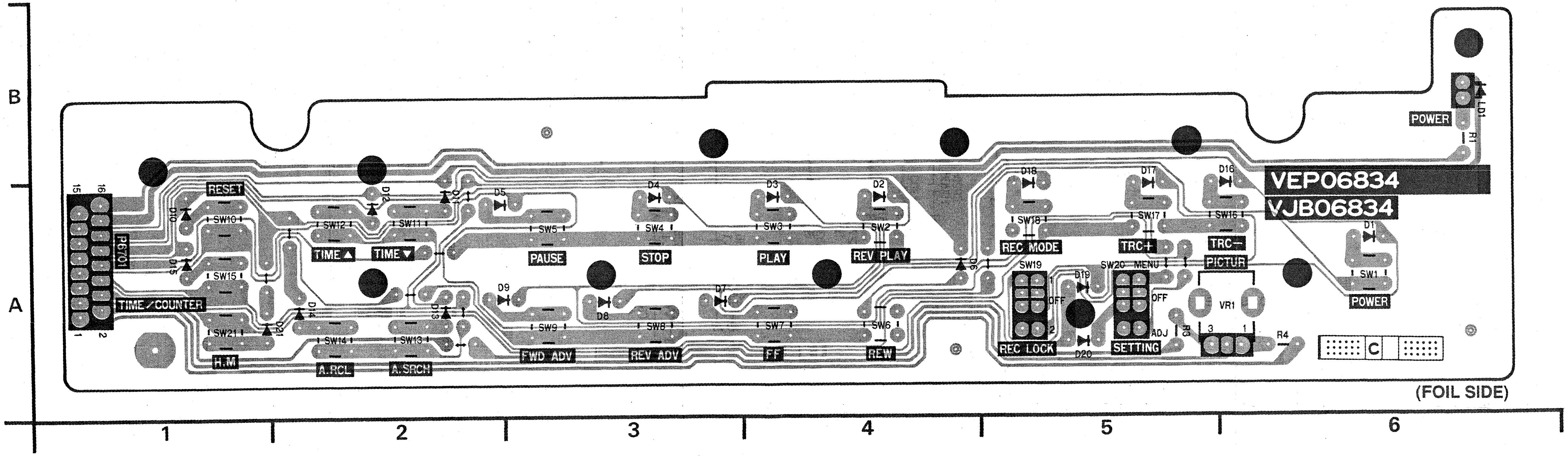
REF. NO. 500 SERIES

FRONT 2 C.B.A. (E15) AND FRONT 2 SCHEMATIC DIAGRAM (E15)


C
B
A
1
2
3
4
(TO FRONT (1))
P6701
P6604 - 16 16 POWER_LED
15
P6604 - 14 14 GND
P6604 - 13 13 K_P60
P6604 - 12 12 K_P61
P6604 - 11 11 K_P62
P6604 - 10 10 K_P63
P6604 - 9 9 K_P70
P6604 - 8 8 K_S0
P6604 - 7 7 K_S1
P6604 - 6 6 K_S2
P6604 - 5 5 K_S3
P6604 - 4 4 K_S4
P6604 - 3 3 PIC_12V
P6604 - 2 2 PIC_CTL
P6604 - 1 1 V_GND
R6701 220(1/4W)
LD6701 LN840RCP
POWER
R6703 75K (1/4W)
CW
VR6701 20K(B) EVUJ16E04B24
PICTURE
R6704 0 (1/4W)
POWER SW6701 EVQQS205K
REV_PLAY SW6702 EVQQS205K
PLAY SW6703 EVQQS205K
STOP SW6704 EVQQS205K
PAUSE SW6705 EVQQS205K
D6701 MA165
D6702 MA165
D6703 MA165
D6704 MA165
D6705 MA165
REW SW6706 EVQQS205K
FF SW6707 EVQQS205K
REV ADV SW6708 EVQQS205K
FWD ADV SW6709 EVQQS205K
RESET SW6710 EVQQS205K
D6706 MA165
D6707 MA165
D6708 MA165
D6709 MA165
D6710 MA165
TIME ▽ SW6711 EVQQS205K
TIME △ SW6712 EVQQS205K
A.SRCH SW6713 EVQQS205K
A.RCL SW6714 EVQQS205K
TIME/COUNTER SW6715 EVQQS205K
D6711 MA165
D6712 MA165
D6713 MA165
D6714 MA165
D6715 MA165
TRC - SW6716 EVQQS205K
TRC + SW6717 EVQQS205K
REC MODE SW6718 EVQQS205K
D6716 MA165
D6717 MA165
D6718 MA165
SW6719 VSS0162
1
2
OFF
REC LOCK
D6719 MA165
SW6720 VSS0162
MENU
ADJ
OFF
SETTING
D6720 MA165
H.M SW6721 EVQQS205K
D6721 MA165
REF. NO. 6700 SERIES

FRONT 2 C.B.A.		
Adjustment		
VR6701	A-6	Ⓕ
Switches		
SW6701	A-6	Ⓕ
SW6702	A-4	Ⓕ
SW6703	A-4	Ⓕ
SW6704	A-3	Ⓕ
SW6705	A-3	Ⓕ
SW6706	A-4	Ⓕ
SW6707	A-4	Ⓕ
SW6708	A-3	Ⓕ
SW6709	A-3	Ⓕ
SW6710	A-1	Ⓕ
SW6711	A-2	Ⓕ
SW6712	A-2	Ⓕ
SW6713	A-2	Ⓕ
SW6714	A-2	Ⓕ
SW6715	A-1	Ⓕ
SW6716	A-6	Ⓕ
SW6717	A-5	Ⓕ
SW6718	A-5	Ⓕ
SW6719	A-5	Ⓕ
SW6720	A-5	Ⓕ
SW6721	A-1	Ⓕ
Connector		
P6701	A-1	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE


B
A
1
2
3
4
5
6
VEP06834
VJB06834
POWER
LD1
R1
P6701
15
16
1
2
TIME/COUNTER
RESET
SW10
D10
D15
SW15
SW21
D21
H.M
D12
SW12
SW11
TIME ▲
TIME ▼
D14
SW14
SW13
D13
A.RCL
A.SRCH
D11
D5
SW5
PAUSE
D9
SW9
FWD ADV
D4
SW4
STOP
D8
SW8
REV ADV
D3
SW3
PLAY
D7
SW7
FF
D2
SW2
REV PLAY
SW6
REW
D6
D18
SW18
REC MODE
SW19
OFF
REC LOCK
D19
D20
D17
SW17
TRC+
SW20 MENU
OFF
ADJ
SETTING
R3
D16
SW16
TRC−
PICTUR
VR1
3
1
R4
D1
SW1
POWER
C
(FOIL SIDE)

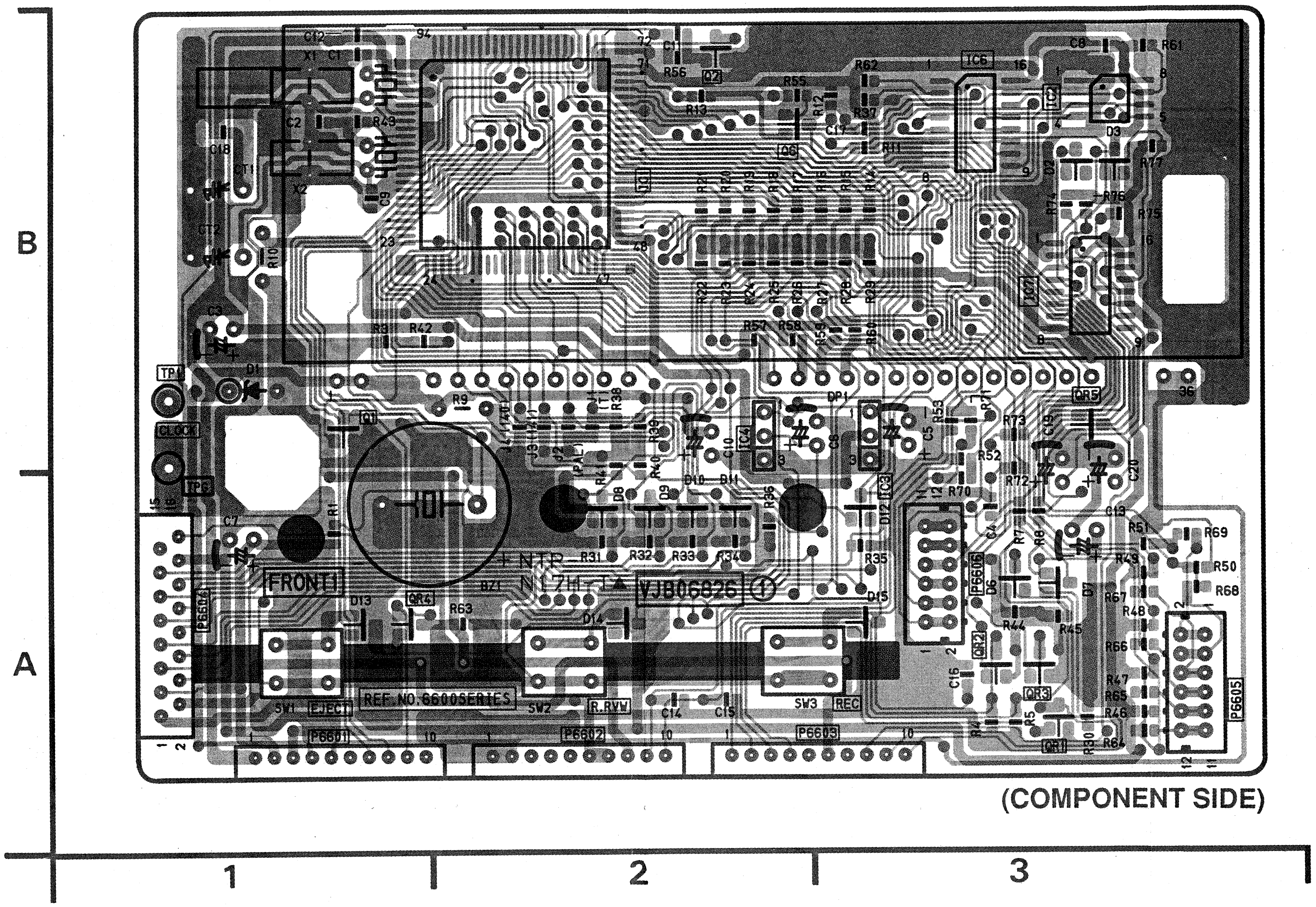
FRONT 1 C.B.A. (E13)

FRONT 2 C.B.A.		
Adjustment		
VR6701	A-6	Ⓕ
Switches		
SW6701	A-6	Ⓕ
SW6702	A-4	Ⓕ
SW6703	A-4	Ⓕ
SW6704	A-3	Ⓕ
SW6705	A-3	Ⓕ
SW6706	A-4	Ⓕ
SW6707	A-4	Ⓕ
SW6708	A-3	Ⓕ
SW6709	A-3	Ⓕ
SW6710	A-1	Ⓕ
SW6711	A-2	Ⓕ
SW6712	A-2	Ⓕ
SW6713	A-2	Ⓕ
SW6714	A-2	Ⓕ
SW6715	A-1	Ⓕ
SW6716	A-6	Ⓕ
SW6717	A-5	Ⓕ
SW6718	A-5	Ⓕ
SW6719	A-5	Ⓕ
SW6720	A-5	Ⓕ
SW6721	A-1	Ⓕ
Connector		
P6701	A-1	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

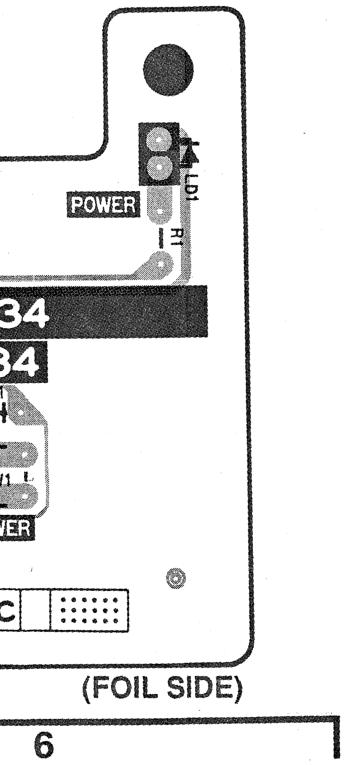
FRONT 1 C.B.A.		
Transistors		
Q6601	B-1	Ⓒ
Q6602	B-2	Ⓒ
Q6606	B-2	Ⓒ
Transistor-Resistors		
QR6601	A-3	Ⓒ
QR6602	A-3	Ⓒ
QR6603	A-3	Ⓒ
QR6604	A-1	Ⓒ
QR6605	B-3	Ⓒ
Integrated Circuits		
IC6601	B-2	Ⓒ
IC6602	B-3	Ⓒ
IC6603	B-3	Ⓒ
IC6604	B-2	Ⓒ
IC6606	B-3	Ⓒ
IC6607	B-3	Ⓒ
Test Points		
TP6601	B-1	Ⓒ
TPG	A-1	Ⓒ
Switches		
SW6601	A-1	Ⓒ
SW6602	A-2	Ⓒ
SW6603	A-2	Ⓒ
Connectors		
P6601	A-1	Ⓒ
P6602	A-2	Ⓒ
P6603	A-2	Ⓒ
P6604	A-1	Ⓒ
P6605	A-3	Ⓒ
P6606	A-3	Ⓒ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE



B
A
1
2
3
FRONT1
VJB06826
REF.NO.6600SERIES
SW1
EJECT
SW2
R.RVW
SW3
REC
P6601
P6602
P6603
P6604
P6605
P6606
IC1
IC2
IC3
IC4
IC5
IC6
IC7
Q1
Q2
Q6
QR1
QR2
QR3
QR4
QR5
TP1
CLOCK
TPG
X1
X2
CT1
CT2
DP1
D1
D3
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C12
C13
C14
C15
C16
C17
C18
C19
C20
R1
R9
R10
R11
R12
R13
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R55
R56
R57
R58
R61
R62
R63
R64
R65
R66
R67
R68
R69
R70
R71
R72
R73
R75
R76
R77
NTP
N17H

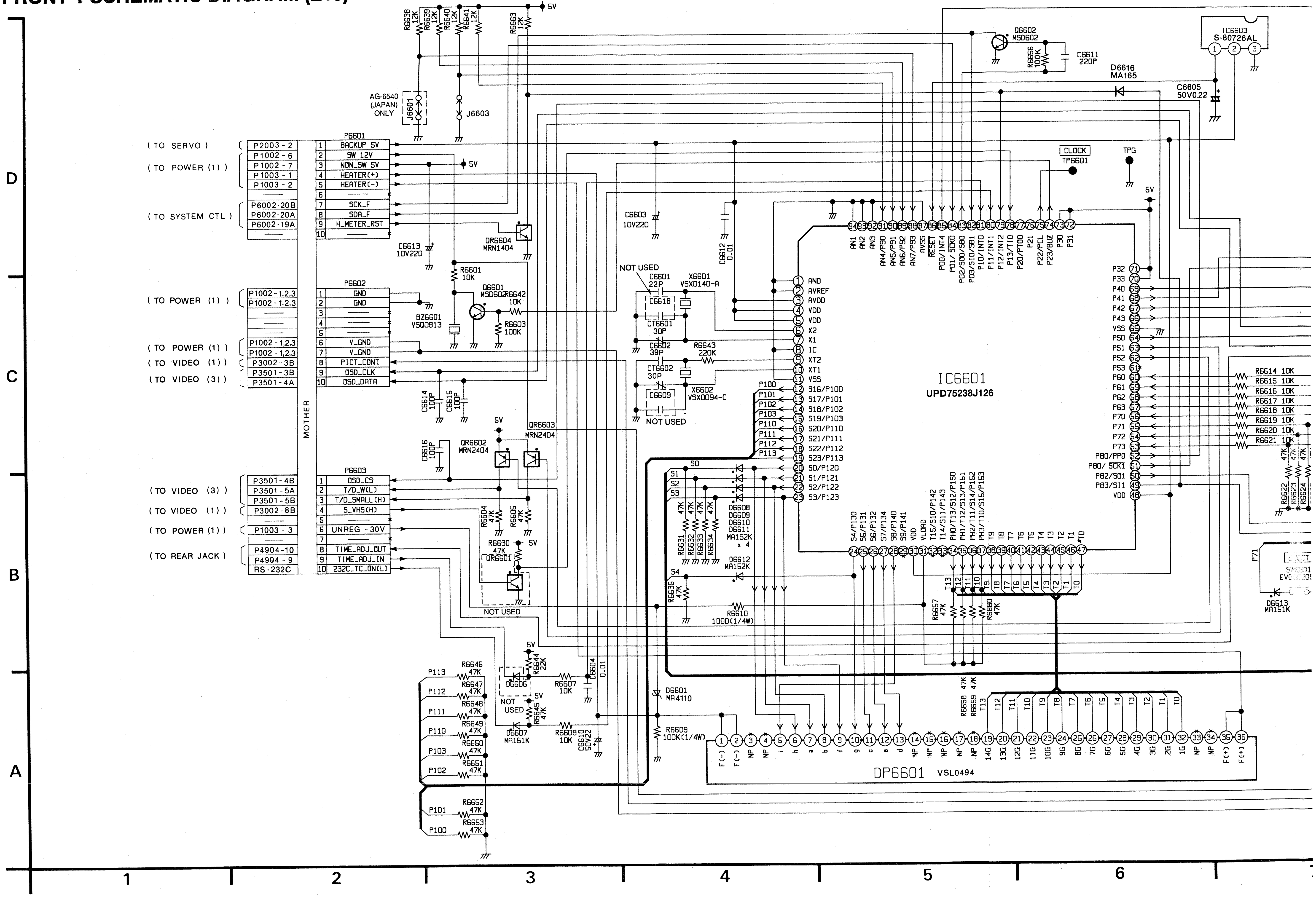
(COMPONENT SIDE)



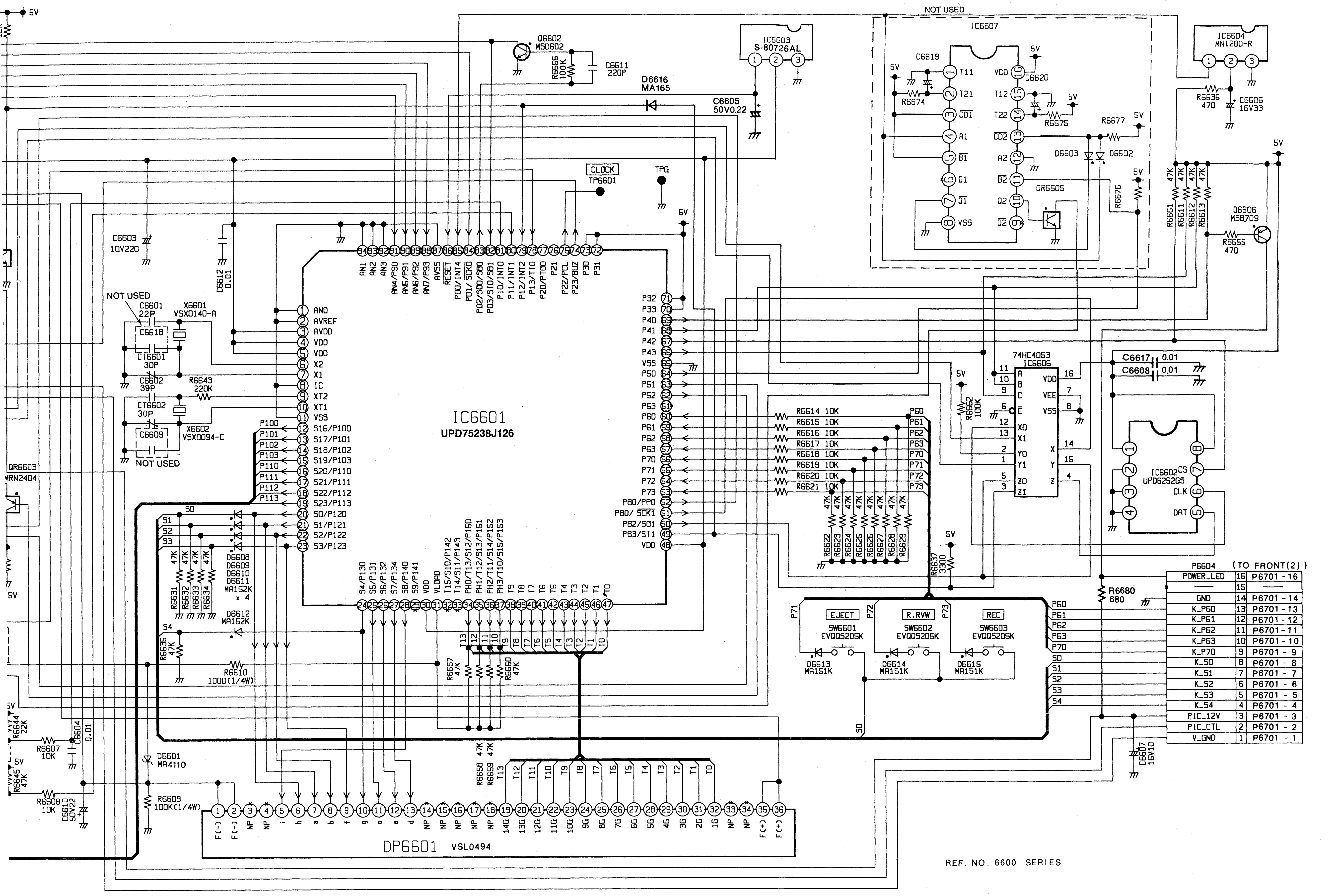
POWER
LD1
R1
34
34
WER
6

(FOIL SIDE)

FRONT 1 SCHEMATIC DIAGRAM (E13)



5V
R6638 12K
R6639 12K
R6640 12K
R6641 12K
R6663 12K
AG-6540 (JAPAN) ONLY
J6601
J6603
Q6602 MSD602
R6656 100K
C6611 220P
IC6603 S-80726AL
D6616 MA165
C6605 50V0.22
(TO SERVO)
(TO POWER (1))
(TO SYSTEM CTL)
P2003 - 2
P1002 - 6
P1002 - 7
P1003 - 1
P1003 - 2
P6002-20B
P6002-20A
P6002-19A
P6601
BACKUP 5V
SW 12V
NON_SW 5V
HEATER(+)
HEATER(-)
SCK_F
SDA_F
H_METER_RST
C6613 10V220
QR6604 MRN1404
R6601 10K
Q6601 MSD602
R6642 10K
R6603 100K
BZ6601 VSQ0813
P6602
GND
V_GND
PICT_CONT
OSD_CLK
OSD_DATA
P1002 - 1,2,3
P3002 - 3B
P3501 - 3B
P3501 - 4A
(TO VIDEO (1))
(TO VIDEO (3))
MOTHER
C6614 100P
C6615 100P
C6616 100P
QR6602 MRN2404
QR6603 MRN2404
P6603
OSD_CS
T/D_W(L)
T/D_SMALL(H)
S_VHS(H)
UNREG - 30V
TIME_ADJ_OUT
TIME_ADJ_IN
232C_TC_ON(L)
P3501 - 4B
P3501 - 5A
P3501 - 5B
P3002 - 8B
P1003 - 3
P4904 - 10
P4904 - 9
RS - 232C
(TO REAR JACK)
R6604 47K
R6605 47K
R6630 47K
QR6601
NOT USED
C6603 10V220
C6612 0.01
NOT USED
C6601 22P
X6601 VSX0140-A
C6618
CT6601 30P
C6602 39P
R6643 220K
CT6602 30P
X6602 VSX0094-C
C6609
CLOCK
TP6601
TPG
IC6601
UPD75238J126
AN0
AVREF
AVDD
VDD
X2
X1
IC
XT2
XT1
VSS
S16/P100
S17/P101
S18/P102
S19/P103
S20/P110
S21/P111
S22/P112
S23/P113
S0/P120
S1/P121
S2/P122
S3/P123
AN1
AN2
AN3
AN4/P90
AN5/P91
AN6/P92
AN7/P93
AVSS
RESET
P00/INT4
P01/SCK0
P02/SO0/SB0
P03/SI0/SB1
P10/INT0
P11/INT1
P12/INT2
P13/TI0
P20/PTO0
P21
P22/PCL
P23/BUZ
P30
P31
P32
P33
P40
P41
P42
P43
VSS
P50
P51
P52
P53
P60
P61
P62
P63
P70
P71
P72
P73
P80/PPO
P80/SCK1
P82/SO1
P83/SI1
VDD
S4/P130
S5/P131
S6/P132
S7/P134
S8/P140
S9/P141
VDD
VLOAD
T15/S10/P142
T14/S11/P143
PH0/T13/S12/P150
PH1/T12/S13/P151
PH2/T11/S14/P152
PH3/T10/S15/P153
T9
T8
T7
T6
T5
T4
T3
T2
T1
T0
R6614 10K
R6615 10K
R6616 10K
R6617 10K
R6618 10K
R6619 10K
R6620 10K
R6621 10K
R6622 47K
R6623 47K
R6624 47K
P71
D6613 MA151K
D6608 D6609 D6610 D6611 MA152K x 4
R6631 47K
R6632 47K
R6633 47K
R6634 47K
D6612 MA152K
R6635 47K
R6610 1000(1/4W)
R6657 47K
R6660 47K
R6658 47K
R6659 47K
P113
P112
P111
P110
P103
P102
P101
P100
R6646 47K
R6647 47K
R6648 47K
R6649 47K
R6650 47K
R6651 47K
R6652 47K
R6653 47K
R6644 22K
D6606
NOT USED
R6645 47K
D6607 MA151K
R6607 10K
R6608 10K
C6604 0.01
C6610 50V22
D6601 MA4110
R6609 100K(1/4W)
DP6601 VSL0494
F(-)
NP
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
F(+)
A
B
C
D
1
2
3
4
5
6

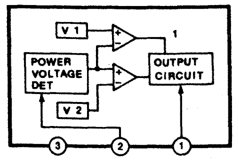


NOT USED
IC6601
UPD75238J126
IC6603
S-80726AL
IC6604
MN1280-R
IC6607
IC6606
74HC4053
IC6602
UPD6252GS
CS
CLK
DAT
Q6602
MSD602
Q6606
MSB709
QR6605
QR6603
MRN2404
D6616
MA165
D6601
MA4110
D6602
D6603
D6608
D6609
D6610
D6611
MA152K
x 4
D6612
MA152K
D6613
MA151K
D6614
MA151K
D6615
MA151K
X6601
VSX0140-A
X6602
VSX0094-C
C6601
22P
C6618
CT6601
30P
C6602
39P
CT6602
30P
C6609
C6603
10V220
C6604
0.01
C6605
50V0.22
C6606
16V33
C6607
16V10
C6608
0.01
C6610
50V22
C6611
220P
C6612
0.01
C6617
0.01
C6619
C6620
R6607
10K
R6608
10K
R6609
100K(1/4W)
R6610
100Ω(1/4W)
R6614 10K
R6615 10K
R6616 10K
R6617 10K
R6618 10K
R6619 10K
R6620 10K
R6621 10K
R6622
R6623
R6624
R6625
R6626
R6627
R6628
R6629
47K
R6631
R6632
R6633
R6634
47K
R6635
47K
R6636
470
R6637
3300
R6643
220K
R6644
22K
R6645
47K
R6655
470
R6656
100K
R6657
47K
R6658
47K
R6659
47K
R6660
47K
R6661
R6611
R6612
R6613
47K
R6662
100K
R6674
R6675
R6676
R6677
R6680
680
CLOCK
TP6601
TPG
5V
EJECT
SW6601
EVQQS205K
R.RVW
SW6602
EVQQS205K
REC
SW6603
EVQQS205K
P71
P72
P73
P60
P61
P62
P63
P70
S0
S1
S2
S3
S4
P100
P101
P102
P103
P110
P111
P112
P113
AN0
AVREF
AVDD
VDD
X2
X1
IC
XT2
XT1
VSS
S16/P100
S17/P101
S18/P102
S19/P103
S20/P110
S21/P111
S22/P112
S23/P113
S0/P120
S1/P121
S2/P122
S3/P123
AN1
AN2
AN3
AN4/P90
AN5/P91
AN6/P92
AN7/P93
AVSS
RESET
P00/INT4
P01/SCK0
P02/SO0/SB0
P03/SI0/SB1
P10/INT0
P11/INT1
P12/INT2
P13/TI0
P20/PTO0
P21
P22/PCL
P23/BUZ
P30
P31
P32
P33
P40
P41
P42
P43
P50
P51
P52
P53
P80/PPO
P80/SCK1
P82/SO1
P83/SI1
S4/P130
S5/P131
S6/P132
S7/P133
S8/P140
S9/P141
VLOAD
T15/S10/P142
T14/S11/P143
PH0/T13/S12/P150
PH1/T12/S13/P151
PH2/T11/S14/P152
PH3/T10/S15/P153
T9
T8
T7
T6
T5
T4
T3
T2
T1
T0
T11
T21
CD1
R1
B1
Q1
D1
T12
T22
CD2
A2
B2
Q2
VDD
VEE
X0
Y0
Y1
Z0
Z1
DP6601
VSL0494
F(-)
NP
14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
F(+)

P6604 (TO FRONT(2))

POWER_LED	16	P6701 - 16
——	15	——
GND	14	P6701 - 14
K_P60	13	P6701 - 13
K_P61	12	P6701 - 12
K_P62	11	P6701 - 11
K_P63	10	P6701 - 10
K_P70	9	P6701 - 9
K_S0	8	P6701 - 8
K_S1	7	P6701 - 7
K_S2	6	P6701 - 6
K_S3	5	P6701 - 5
K_S4	4	P6701 - 4
PIC_12V	3	P6701 - 3
PIC_CTL	2	P6701 - 2
V_GND	1	P6701 - 1

IC6603 MN1280-L
IC6604 MN1280-R

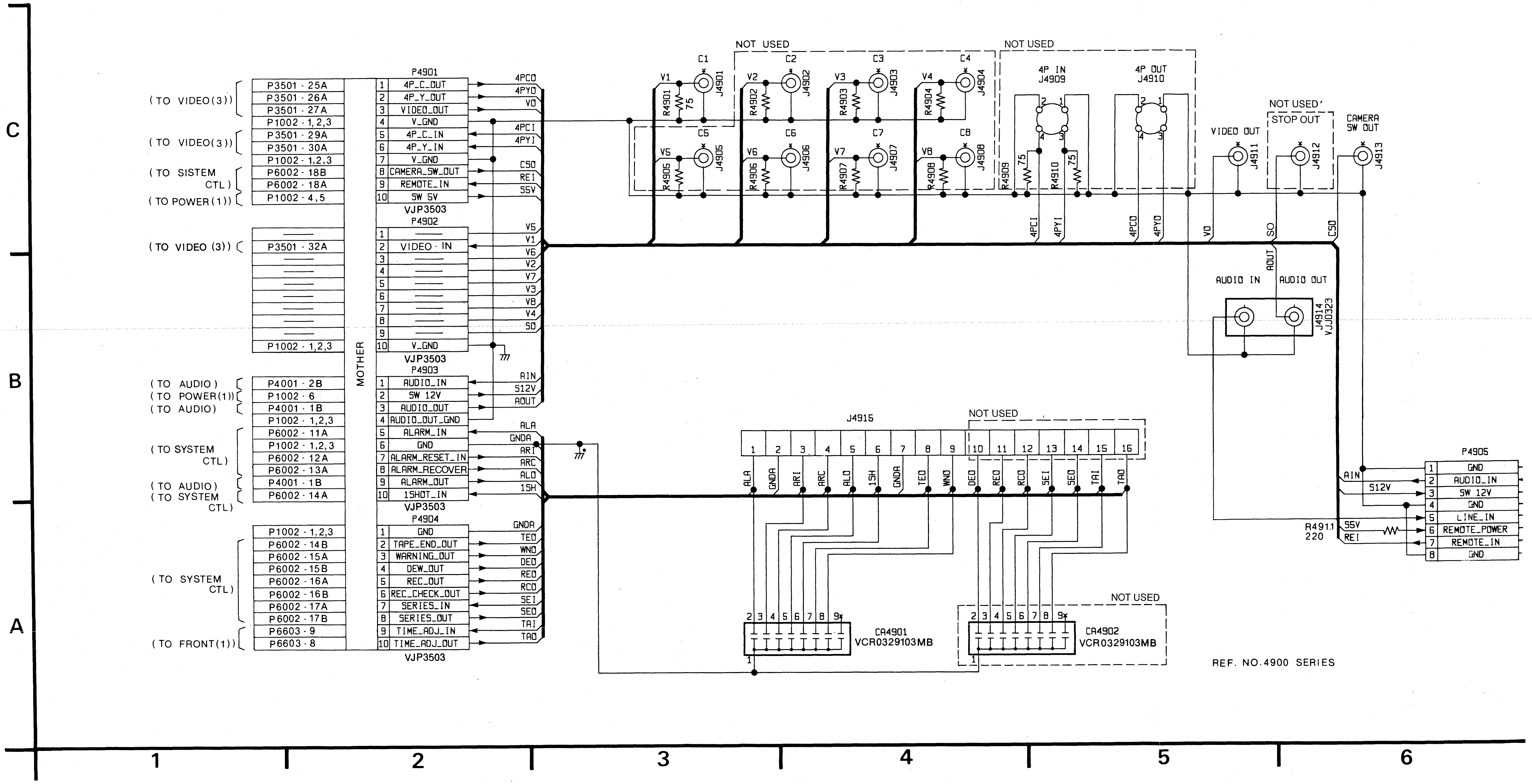


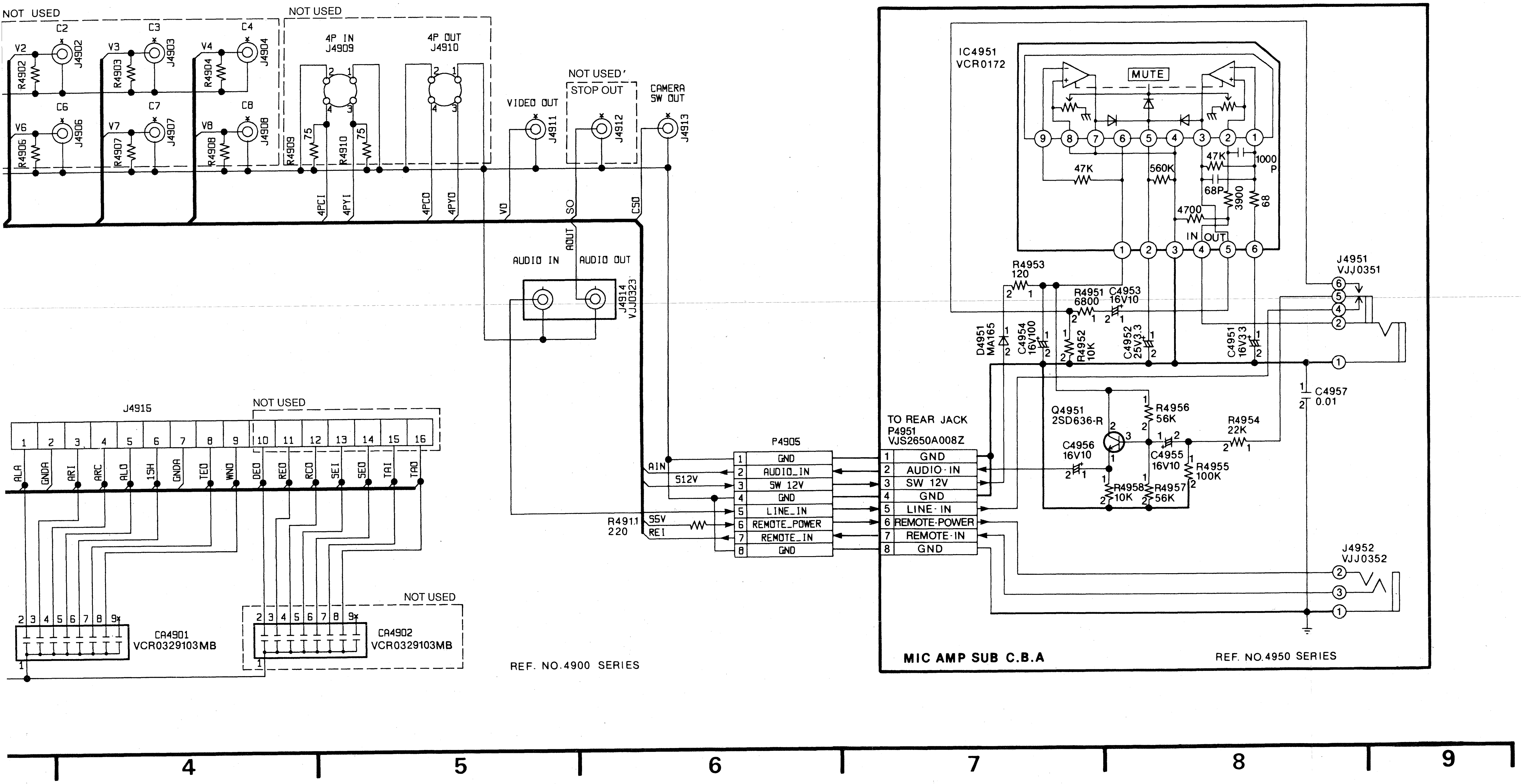
V 1
V 2
POWER VOLTAGE DET
OUTPUT CIRCUIT
1
3
2
1

REF. NO. 6600 SERIES

3
4
5
6
7
8
9

REAR JACK (E16) AND MIC AMP SUB (E17) SCHEMATIC DIAGRAM

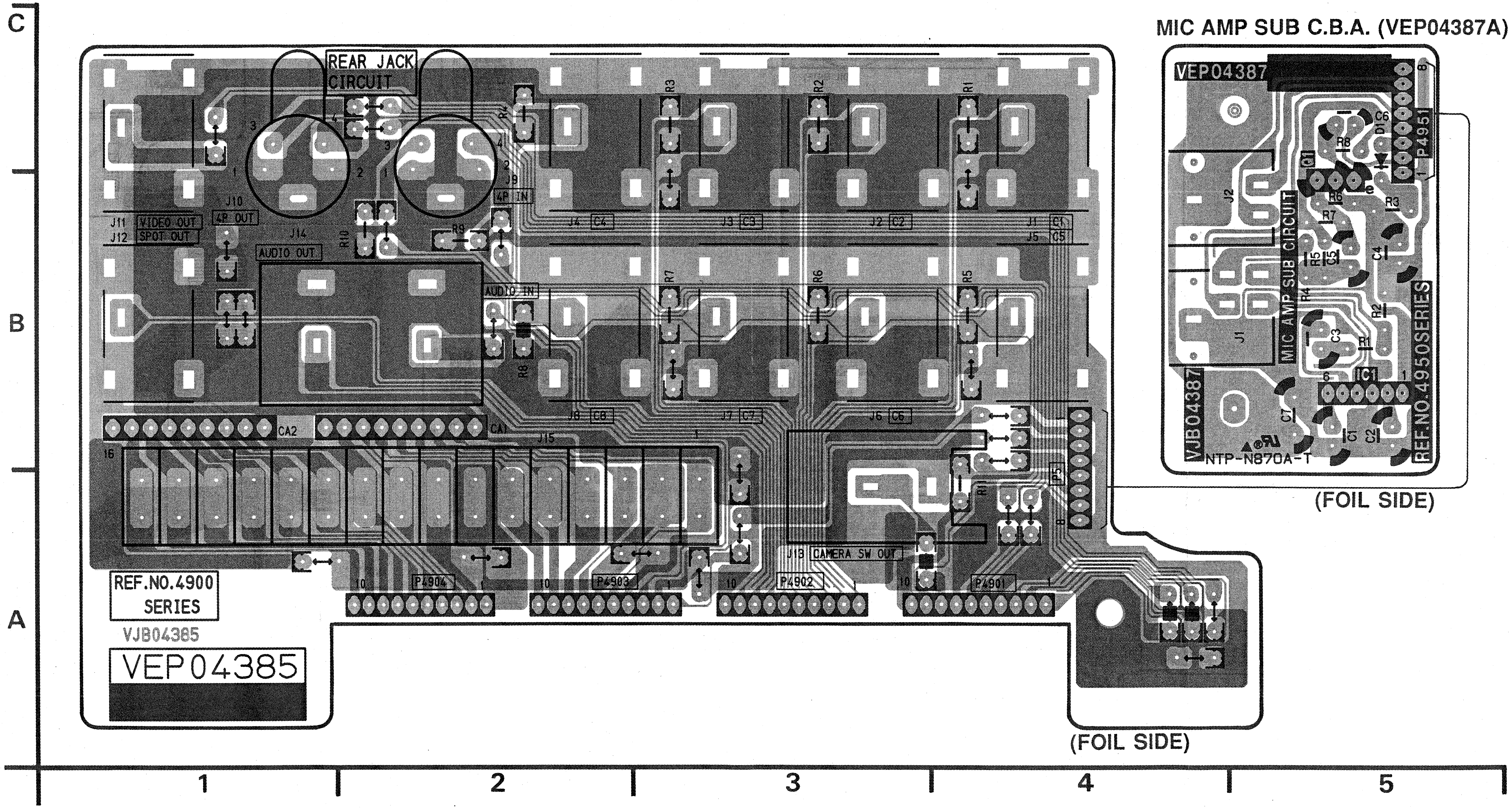

C
B
A
1
2
3
4
5
6
(TO VIDEO(3))
(TO VIDEO(3))
(TO SISTEM CTL)
(TO POWER(1))
(TO VIDEO (3))
(TO AUDIO)
(TO POWER(1))
(TO AUDIO)
(TO SYSTEM CTL)
(TO AUDIO)
(TO SYSTEM CTL)
(TO SYSTEM CTL)
(TO FRONT(1))
P3501 - 25A
P3501 - 26A
P3501 - 27A
P1002 - 1,2,3
P3501 - 29A
P3501 - 30A
P1002 - 1,2,3
P6002 - 18B
P6002 - 18A
P1002 - 4,5
P3501 - 32A
P1002 - 1,2,3
P4001 - 2B
P1002 - 6
P4001 - 1B
P1002 - 1,2,3
P6002 - 11A
P1002 - 1,2,3
P6002 - 12A
P6002 - 13A
P4001 - 1B
P6002 - 14A
P1002 - 1,2,3
P6002 - 14B
P6002 - 15A
P6002 - 15B
P6002 - 16A
P6002 - 16B
P6002 - 17A
P6002 - 17B
P6603 - 9
P6603 - 8
MOTHER
P4901
1 4P_C_OUT
2 4P_Y_OUT
3 VIDEO_OUT
4 V_GND
5 4P_C_IN
6 4P_Y_IN
7 V_GND
8 CAMERA_SW_OUT
9 REMOTE_IN
10 SW 5V
VJP3503
P4902
2 VIDEO - IN
10 V_GND
VJP3503
P4903
1 AUDIO_IN
2 SW 12V
3 AUDIO_OUT
4 AUDIO_OUT_GND
5 ALARM_IN
6 GND
7 ALARM_RESET_IN
8 ALARM_RECOVER
9 ALARM_OUT
10 1SHOT_IN
VJP3503
P4904
1 GND
2 TAPE_END_OUT
3 WARNING_OUT
4 DEW_OUT
5 REC_OUT
6 REC_CHECK_OUT
7 SERIES_IN
8 SERIES_OUT
9 TIME_ADJ_IN
10 TIME_ADJ_OUT
VJP3503
4PCO
4PYO
VO
4PCI
4PYI
CSO
REI
S5V
V5
V1
V6
V2
V7
V3
V8
V4
SO
AIN
S12V
AOUT
ALA
GNDA
ARI
ARC
ALO
1SH
GNDA
TEO
WNO
DEO
REO
RCO
SEI
SEO
TAI
TAO
NOT USED
NOT USED
C1
C2
C3
C4
C5
C6
C7
C8
V1
V2
V3
V4
V5
V6
V7
V8
J4901
J4902
J4903
J4904
J4905
J4906
J4907
J4908
R4901
R4902
R4903
R4904
R4905
R4906
R4907
R4908
75
4P IN
J4909
4P OUT
J4910
R4909
R4910
75
75
NOT USED'
STOP OUT
VIDEO OUT
CAMERA SW OUT
J4911
J4912
J4913
4PCI
4PYI
4PCO
4PYO
VO
SO
CSO
AOUT
AUDIO IN
AUDIO OUT
J4914
VJJ0323
J4915
NOT USED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
ALA
GNDA
ARI
ARC
ALO
1SH
GNDA
TEO
WNO
DEO
REO
RCO
SEI
SEO
TAI
TAO
CA4901
VCR0329103MB
NOT USED
CA4902
VCR0329103MB
P4905
1 GND
2 AUDIO_IN
3 SW 12V
4 GND
5 LINE_IN
6 REMOTE_POWER
7 REMOTE_IN
8 GND
AIN
S12V
S5V
REI
R4911
220
REF. NO.4900 SERIES


NOT USED
C2
V2
R4902
J4902
C3
V3
R4903
J4903
C4
V4
R4904
J4904
C6
V6
R4906
J4906
C7
V7
R4907
J4907
C8
V8
R4908
J4908
NOT USED
4P IN
J4909
4P OUT
J4910
R4909
75
R4910
75
4PCI
4PYI
4PCO
4PYO
VIDEO OUT
J4911
NOT USED'
STOP OUT
J4912
CAMERA SW OUT
J4913
VO
SO
CSO
AOUT
AUDIO IN
AUDIO OUT
J4914
VJJ0323
J4915
NOT USED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
ALA
GNDA
ARI
ARC
ALO
1SH
GNDA
TEO
WNO
DEO
REO
RCO
SEI
SEO
TAI
TAO
CA4901
VCR0329103MB
NOT USED
CA4902
VCR0329103MB
AIN
S12V
SSV
REI
R4911
220
P4905
1 GND
2 AUDIO_IN
3 SW 12V
4 GND
5 LINE_IN
6 REMOTE_POWER
7 REMOTE_IN
8 GND
REF. NO.4900 SERIES
IC4951
VCR0172
MUTE
47K
560K
47K
1000P
68P
3900
68
4700
IN
OUT
R4953
120
R4951
6800
C4953
16V10
D4951
MA165
C4954
16V100
R4952
10K
C4952
25V3.3
C4951
16V33
J4951
VJJ0351
C4957
0.01
TO REAR JACK
P4951
VJS2650A008Z
1 GND
2 AUDIO·IN
3 SW 12V
4 GND
5 LINE·IN
6 REMOTE·POWER
7 REMOTE·IN
8 GND
Q4951
2SD636-R
R4956
56K
C4956
16V10
C4955
16V10
R4954
22K
R4955
100K
R4958
10K
R4957
56K
J4952
VJJ0352
MIC AMP SUB C.B.A
REF. NO.4950 SERIES
4
5
6
7
8
9

REAR JACK C.B.A. (E16) AND MIC AMP SUB C.B.A. (E17)

REAR JACK C.B.A		
Transistor		
Q4951	B-5	Ⓕ
Integrated Circuit		
IC4951	B-5	Ⓕ
Connectors		
P4901	A-4	Ⓕ
P4902	A-3	Ⓕ
P4903	A-2	Ⓕ
P4904	A-2	Ⓕ
P4905	A-4	Ⓕ
P4951	C-5	Ⓕ

ADDRESS INFORMATION
Ⓒ ... COMPONENT SIDE
Ⓕ ... FOIL SIDE

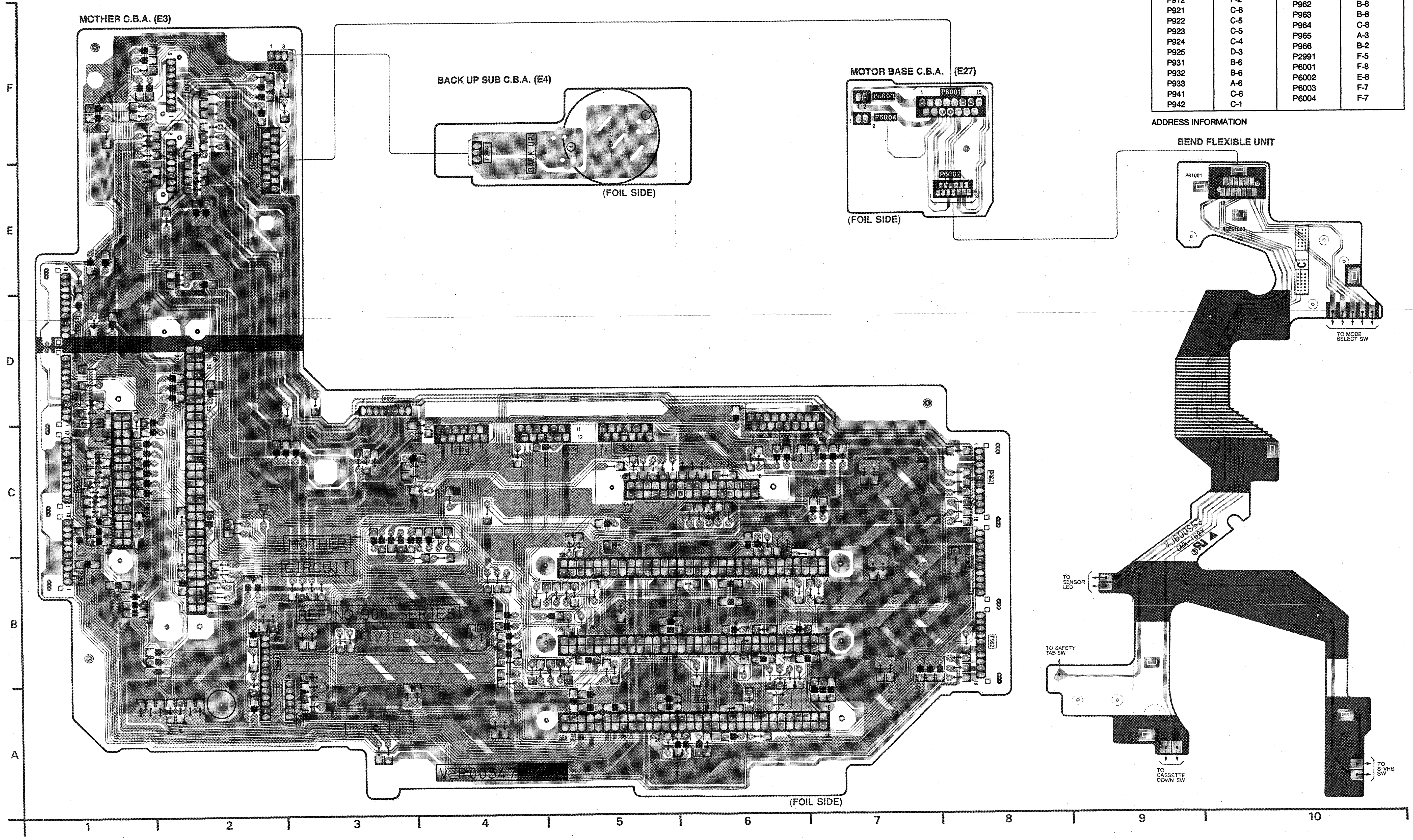

MIC AMP SUB C.B.A. (VEP04387A)
C
B
A
1
2
3
4
5
REAR JACK CIRCUIT
J11 VIDEO OUT
J12 SPOT OUT
J10 4P OUT
J14 AUDIO OUT
J9 4P IN
AUDIO IN
J1 C1
J2 C2
J3 C3
J4 C4
J5 C5
J6 C6
J7 C7
J8 C8
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
CA1
CA2
J15
P5
J13 CAMERA SW OUT
P4901
P4902
P4903
P4904
REF.NO.4900 SERIES
VJB04385
VEP04385
(FOIL SIDE)
VEP04387
P4951
MIC AMP SUB CIRCUIT
REF.NO.4950SERIES
VJB04387
NTP-N870A-T
IC1
Q1
D1
J1
J2
(FOIL SIDE)

MOTHER (E3), BACK UP SUB (E4), MOTOR BASE C.B.A. (E27) AND BEND FLEXIBLE UNIT

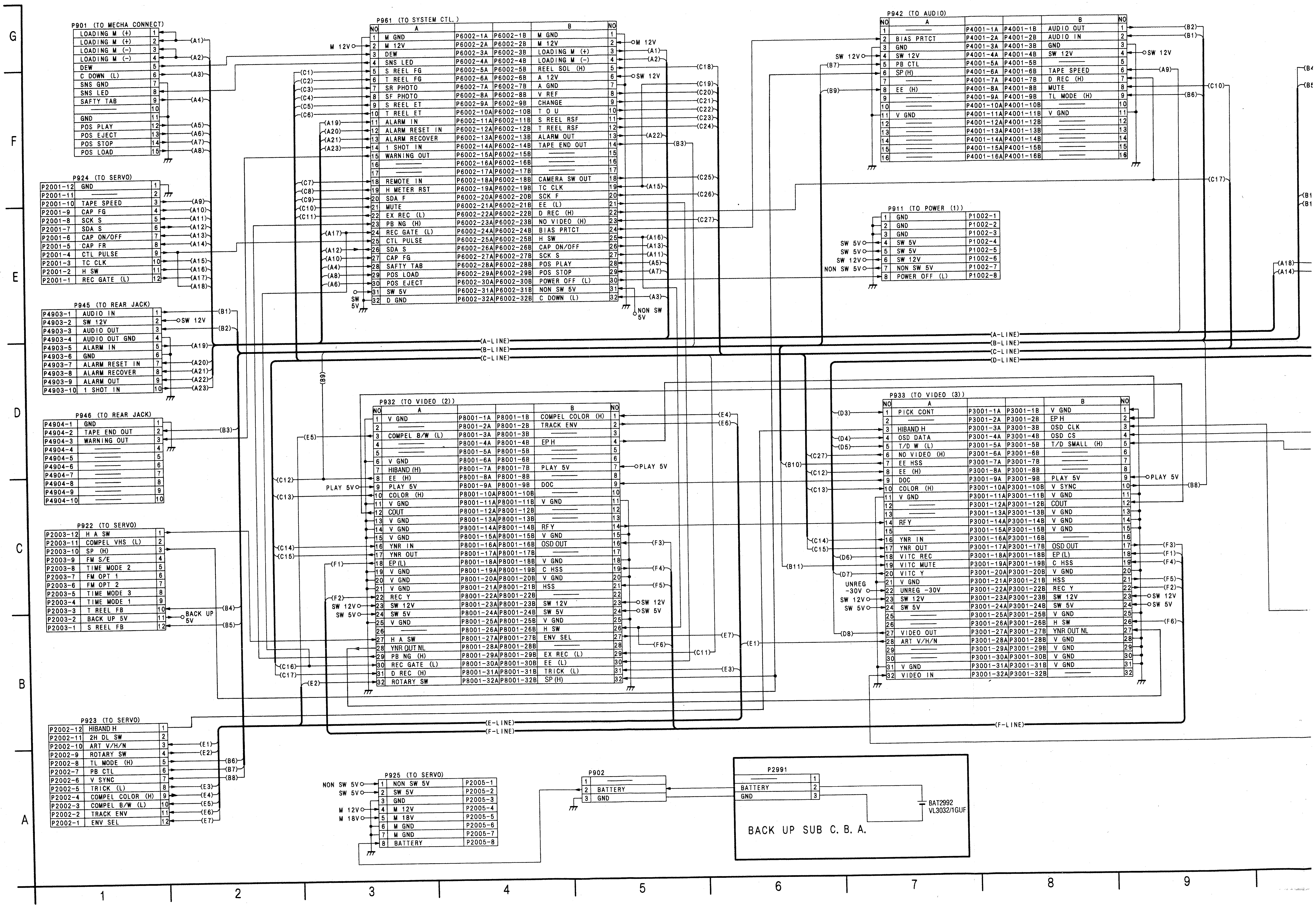
MOTHER C.B.A

Connectors			
P901	F-2	P943	B-1
P902	F-2	P944	C-1
P911	F-2	P945	D-1
P912	F-2	P946	D-1
P921	C-6	P961	C-2
P922	C-5	P962	B-8
P923	C-5	P963	B-8
P924	C-4	P964	C-8
P925	D-3	P965	A-3
P931	B-6	P966	B-2
P932	B-6	P2991	F-5
P933	A-6	P6001	F-8
P941	C-6	P6002	E-8
P942	C-1	P6003	F-7
		P6004	F-7

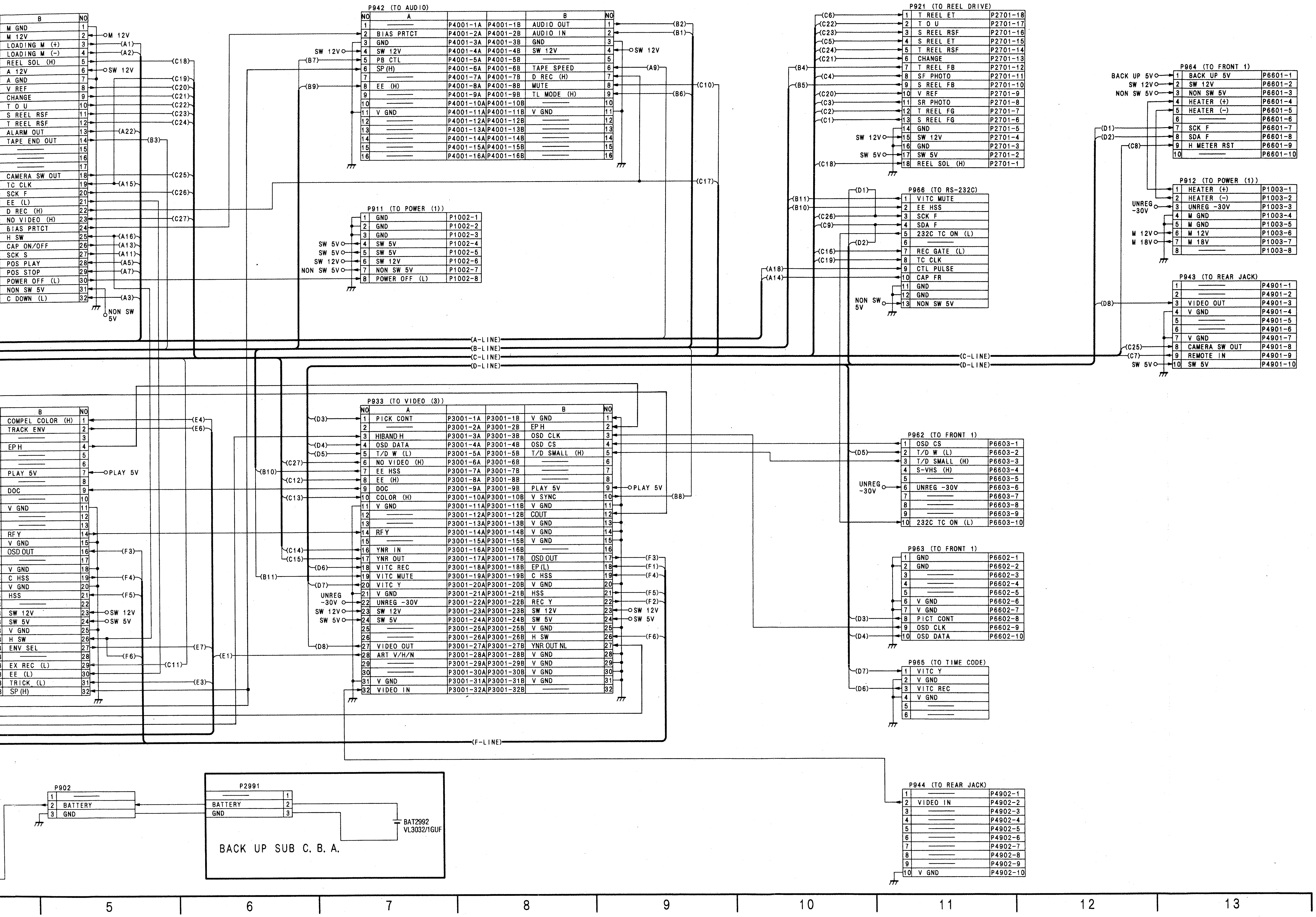
ADDRESS INFORMATION


MOTHER C.B.A. (E3)
BACK UP SUB C.B.A. (E4)
MOTOR BASE C.B.A. (E27)
BEND FLEXIBLE UNIT
BACK UP
P2992
P6001
P6002
P6003
P6004
P61001
(FOIL SIDE)
(FOIL SIDE)
(FOIL SIDE)
MOTHER
CIRCUIT
REF.NO.900 SERIES
VJB00S47
VEP00S47
VJB00S53
TO MODE SELECT SW
TO SENSOR LED
TO SAFETY TAB SW
TO CASSETTE DOWN SW
TO S-VHS SW
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

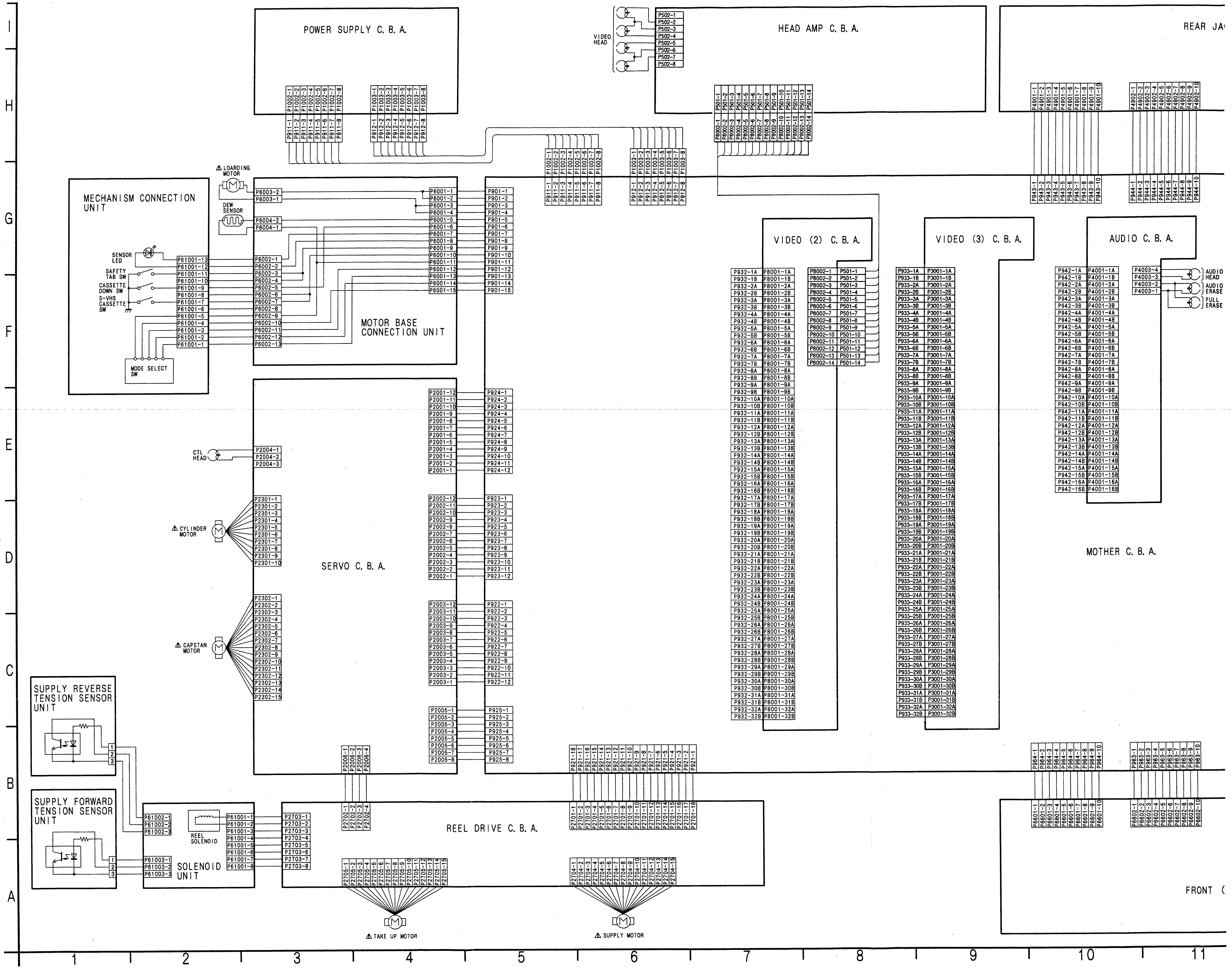
MOTHER (E3) AND BACK UP SUB (E4) SCHEMATIC DIAGRAM


P901 (TO MECHA CONNECT)
LOADING M (+)
LOADING M (+)
LOADING M (-)
LOADING M (-)
DEW
C DOWN (L)
SNS GND
SNS LED
SAFTY TAB
GND
POS PLAY
POS EJECT
POS STOP
POS LOAD
P924 (TO SERVO)
P2001-12 GND
P2001-10 TAPE SPEED
P2001-9 CAP FG
P2001-8 SCK S
P2001-7 SDA S
P2001-6 CAP ON/OFF
P2001-5 CAP FR
P2001-4 CTL PULSE
P2001-3 TC CLK
P2001-2 H SW
P2001-1 REC GATE (L)
P945 (TO REAR JACK)
P4903-1 AUDIO IN
P4903-2 SW 12V
P4903-3 AUDIO OUT
P4903-4 AUDIO OUT GND
P4903-5 ALARM IN
P4903-6 GND
P4903-7 ALARM RESET IN
P4903-8 ALARM RECOVER
P4903-9 ALARM OUT
P4903-10 1 SHOT IN
P946 (TO REAR JACK)
P4904-1 GND
P4904-2 TAPE END OUT
P4904-3 WARNING OUT
P922 (TO SERVO)
P2003-12 H A SW
P2003-11 COMPEL VHS (L)
P2003-10 SP (H)
P2003-9 FM S/E
P2003-8 TIME MODE 2
P2003-7 FM OPT 1
P2003-6 FM OPT 2
P2003-5 TIME MODE 3
P2003-4 TIME MODE 1
P2003-3 T REEL FB
P2003-2 BACK UP 5V
P2003-1 S REEL FB
BACK UP 5V
P923 (TO SERVO)
P2002-12 HIBAND H
P2002-11 2H DL SW
P2002-10 ART V/H/N
P2002-9 ROTARY SW
P2002-8 TL MODE (H)
P2002-7 PB CTL
P2002-6 V SYNC
P2002-5 TRICK (L)
P2002-4 COMPEL COLOR (H)
P2002-3 COMPEL B/W (L)
P2002-2 TRACK ENV
P2002-1 ENV SEL
P961 (TO SYSTEM CTL.)
M GND
M 12V
DEW
SNS LED
S REEL FG
T REEL FG
SR PHOTO
SF PHOTO
S REEL ET
T REEL ET
ALARM IN
ALARM RESET IN
ALARM RECOVER
1 SHOT IN
WARNING OUT
REMOTE IN
H METER RST
SDA F
MUTE
EX REC (L)
PB NG (H)
REC GATE (L)
CTL PULSE
SDA S
CAP FG
SAFTY TAB
POS LOAD
POS EJECT
SW 5V
D GND
P6002-1A … P6002-32A
P6002-1B … P6002-32B
M GND
M 12V
LOADING M (+)
LOADING M (-)
REEL SOL (H)
A 12V
A GND
V REF
CHANGE
T O U
S REEL RSF
T REEL RSF
ALARM OUT
TAPE END OUT
CAMERA SW OUT
TC CLK
SCK F
EE (L)
D REC (H)
NO VIDEO (H)
BIAS PRTCT
H SW
CAP ON/OFF
SCK S
POS PLAY
POS STOP
POWER OFF (L)
NON SW 5V
C DOWN (L)
M 12V
SW 12V
NON SW 5V
P942 (TO AUDIO)
BIAS PRTCT
GND
SW 12V
PB CTL
SP (H)
EE (H)
V GND
P4001-1A … P4001-16A
P4001-1B … P4001-16B
AUDIO OUT
AUDIO IN
GND
SW 12V
TAPE SPEED
D REC (H)
MUTE
TL MODE (H)
V GND
P911 (TO POWER (1))
GND
GND
GND
SW 5V
SW 5V
SW 12V
NON SW 5V
POWER OFF (L)
P1002-1 … P1002-8
(A-LINE)
(B-LINE)
(C-LINE)
(D-LINE)
(E-LINE)
(F-LINE)
P932 (TO VIDEO (2))
V GND
COMPEL B/W (L)
V GND
HIBAND (H)
EE (H)
PLAY 5V
COLOR (H)
V GND
COUT
V GND
V GND
V GND
YNR IN
YNR OUT
EP (L)
V GND
V GND
V GND
REC Y
SW 12V
SW 5V
V GND
H A SW
YNR OUT NL
PB NG (H)
REC GATE (L)
D REC (H)
ROTARY SW
P8001-1A … P8001-32A
P8001-1B … P8001-32B
COMPEL COLOR (H)
TRACK ENV
EP H
PLAY 5V
DOC
V GND
RFY
V GND
OSD OUT
V GND
C HSS
V GND
HSS
SW 12V
SW 5V
V GND
H SW
ENV SEL
EX REC (L)
EE (L)
TRICK (L)
SP (H)
PLAY 5V
SW 12V
SW 5V
P933 (TO VIDEO (3))
PICK CONT
HIBAND H
OSD DATA
T/D W (L)
NO VIDEO (H)
EE HSS
EE (H)
DOC
COLOR (H)
V GND
RFY
YNR IN
YNR OUT
VITC REC
VITC MUTE
VITC Y
V GND
UNREG -30V
SW 12V
SW 5V
VIDEO OUT
ART V/H/N
V GND
VIDEO IN
P3001-1A … P3001-32A
P3001-1B … P3001-32B
V GND
EP H
OSD CLK
OSD CS
T/D SMALL (H)
PLAY 5V
V SYNC
V GND
COUT
V GND
V GND
V GND
OSD OUT
EP (L)
C HSS
V GND
HSS
REC Y
SW 12V
SW 5V
V GND
H SW
YNR OUT NL
V GND
V GND
V GND
V GND
UNREG -30V
SW 12V
SW 5V
P925 (TO SERVO)
NON SW 5V
SW 5V
GND
M 12V
M 18V
M GND
M GND
BATTERY
P2005-1 … P2005-8
M 12V
M 18V
P902
BATTERY
GND
P2991
BATTERY
GND
BAT2992
VL3032/1GUF
BACK UP SUB C. B. A.
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9

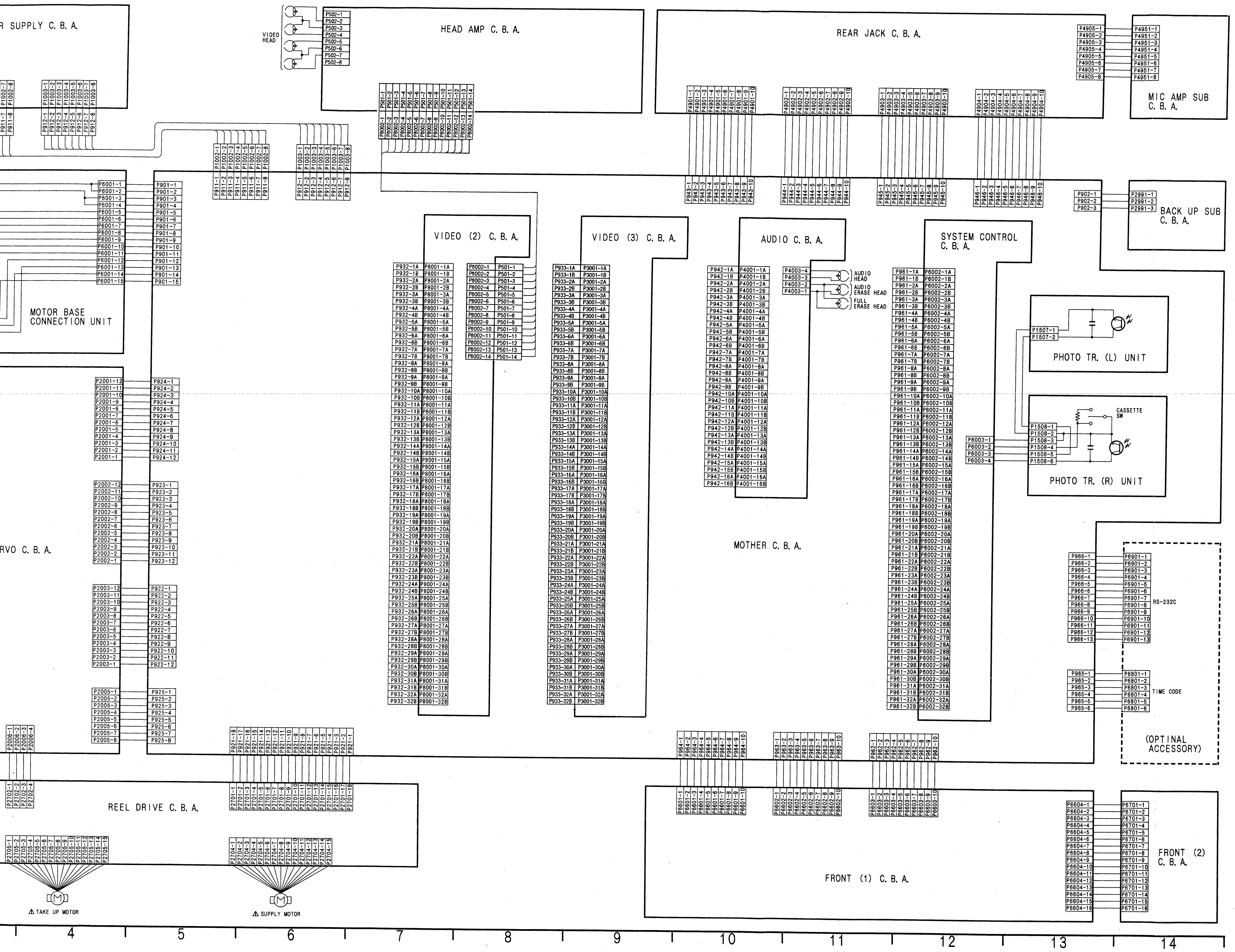
AGRAM


P942 (TO AUDIO)
BIAS PRTCT
SW 12V
PB CTL
SP(H)
EE (H)
V GND
AUDIO OUT
AUDIO IN
GND
TAPE SPEED
D REC (H)
MUTE
TL MODE (H)
P911 (TO POWER (1))
GND
SW 5V
SW 12V
NON SW 5V
POWER OFF (L)
P921 (TO REEL DRIVE)
T REEL ET
T O U
S REEL RSF
S REEL ET
T REEL RSF
CHANGE
T REEL FG
SF PHOTO
S REEL FB
V REF
SR PHOTO
S REEL FG
REEL SOL (H)
P966 (TO RS-232C)
VITC MUTE
EE HSS
SCK F
SDA F
232C TC ON (L)
REC GATE (L)
TC CLK
CTL PULSE
CAP FR
NON SW 5V
P964 (TO FRONT 1)
BACK UP 5V
HEATER (+)
HEATER (-)
H METER RST
P912 (TO POWER (1))
UNREG -30V
M GND
M 12V
M 18V
P943 (TO REAR JACK)
VIDEO OUT
CAMERA SW OUT
REMOTE IN
A-LINE
B-LINE
C-LINE
D-LINE
F-LINE
P933 (TO VIDEO (3))
PICK CONT
HIBAND H
OSD DATA
T/D W (L)
NO VIDEO (H)
EE HSS
DOC
COLOR (H)
RFY
YNR IN
YNR OUT
VITC REC
VITC MUTE
VITC Y
UNREG -30V
ART V/H/N
VIDEO IN
EP H
OSD CLK
OSD CS
T/D SMALL (H)
PLAY 5V
V SYNC
COUT
OSD OUT
EP(L)
C HSS
HSS
REC Y
H SW
YNR OUT NL
P962 (TO FRONT 1)
S-VHS (H)
P963 (TO FRONT 1)
PICT CONT
P965 (TO TIME CODE)
P944 (TO REAR JACK)
P902
BATTERY
P2991
BAT2992
VL3032/1GUF
BACK UP SUB C. B. A.
COMPEL COLOR (H)
TRACK ENV
ENV SEL
EX REC (L)
TRICK (L)
SP(H)
M 12V
LOADING M (+)
LOADING M (-)
REEL SOL (H)
A 12V
ALARM OUT
TAPE END OUT
CAMERA SW OUT
TC CLK
D REC (H)
NO VIDEO (H)
CAP ON/OFF
SCK S
POS PLAY
POS STOP
POWER OFF (L)
C DOWN (L)
5
6
7
8
9
10
11
12
13

INTERCONNECTION SCHEMATIC DIAGRAM


POWER SUPPLY C. B. A.
HEAD AMP C. B. A.
VIDEO HEAD
REAR JA
MECHANISM CONNECTION UNIT
LOARDING MOTOR
DEW SENSOR
SENSOR LED
SAFETY TAB SW
CASSETTE DOWN SW
S-VHS CASSETTE SW
MODE SELECT SW
MOTOR BASE CONNECTION UNIT
VIDEO (2) C. B. A.
VIDEO (3) C. B. A.
AUDIO C. B. A.
AUDIO HEAD
AUDIO ERASE
FULL ERASE
CTL HEAD
CYLINDER MOTOR
CAPSTAN MOTOR
SERVO C. B. A.
MOTHER C. B. A.
SUPPLY REVERSE TENSION SENSOR UNIT
SUPPLY FORWARD TENSION SENSOR UNIT
REEL SOLENOID
SOLENOID UNIT
REEL DRIVE C. B. A.
TAKE UP MOTOR
SUPPLY MOTOR
FRONT (
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

DIAGRAM


R SUPPLY C. B. A.
HEAD AMP C. B. A.
VIDEO HEAD
REAR JACK C. B. A.
MIC AMP SUB C. B. A.
BACK UP SUB C. B. A.
MOTOR BASE CONNECTION UNIT
VIDEO (2) C. B. A.
VIDEO (3) C. B. A.
AUDIO C. B. A.
AUDIO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
SYSTEM CONTROL C. B. A.
PHOTO TR. (L) UNIT
CASSETTE SW
PHOTO TR. (R) UNIT
MOTHER C. B. A.
RVO C. B. A.
RS-232C
TIME CODE
(OPTINAL ACCESSORY)
REEL DRIVE C. B. A.
FRONT (1) C. B. A.
FRONT (2) C. B. A.
⚠ TAKE UP MOTOR
⚠ SUPPLY MOTOR
4
5
6
7
8
9
10
11
12
13
14

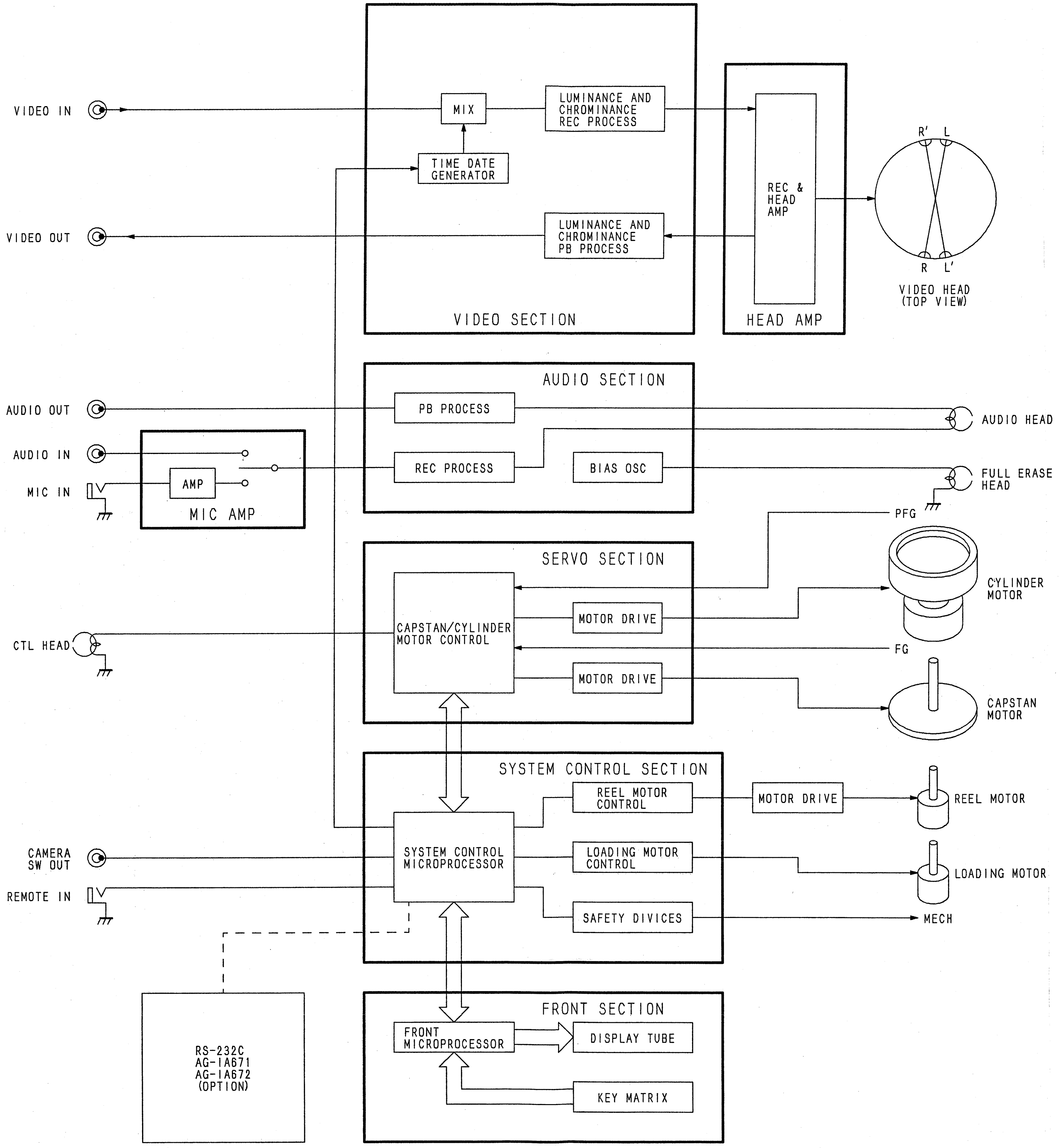
SECTION 5

BLOCK DIAGRAMS

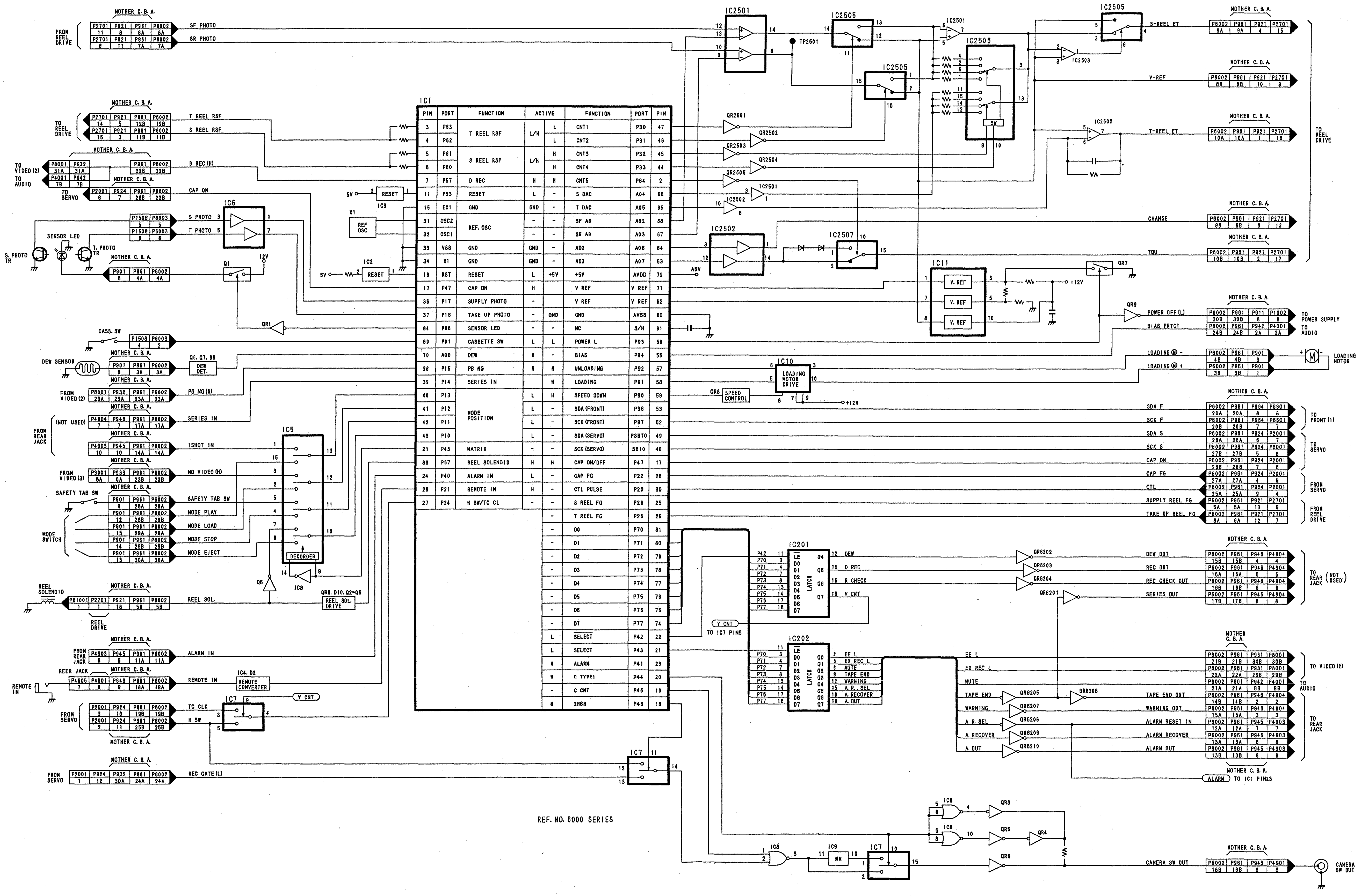
CONTENTS

Overall Block Diagram ······ BLK-3
System Control Block Diagram ······ BLK-4
Servo Block Diagram ······ BLK-5
Video 2 Block Diagram ······ BLK-6
Video 3 Block Diagram ······ BLK-7
Reel Drive Block Diagram ······ BLK-8
Front 1 and Front 2 Block Diagram ······ BLK-9

OVERALL BLOCK DIAGRAM


VIDEO IN
VIDEO OUT
MIX
LUMINANCE AND CHROMINANCE REC PROCESS
TIME DATE GENERATOR
LUMINANCE AND CHROMINANCE PB PROCESS
VIDEO SECTION
REC & HEAD AMP
HEAD AMP
R' L
R L'
VIDEO HEAD (TOP VIEW)
AUDIO SECTION
AUDIO OUT
AUDIO IN
MIC IN
AMP
MIC AMP
PB PROCESS
REC PROCESS
BIAS OSC
AUDIO HEAD
FULL ERASE HEAD
PFG
SERVO SECTION
CAPSTAN/CYLINDER MOTOR CONTROL
MOTOR DRIVE
MOTOR DRIVE
CYLINDER MOTOR
FG
CAPSTAN MOTOR
CTL HEAD
SYSTEM CONTROL SECTION
REEL MOTOR CONTROL
MOTOR DRIVE
REEL MOTOR
SYSTEM CONTROL MICROPROCESSOR
LOADING MOTOR CONTROL
LOADING MOTOR
SAFETY DIVICES
MECH
CAMERA SW OUT
REMOTE IN
RS-232C AG-IA671 AG-IA672 (OPTION)
FRONT SECTION
FRONT MICROPROCESSOR
DISPLAY TUBE
KEY MATRIX

SYSTEM CONTROL BLOCK DIAGRAM

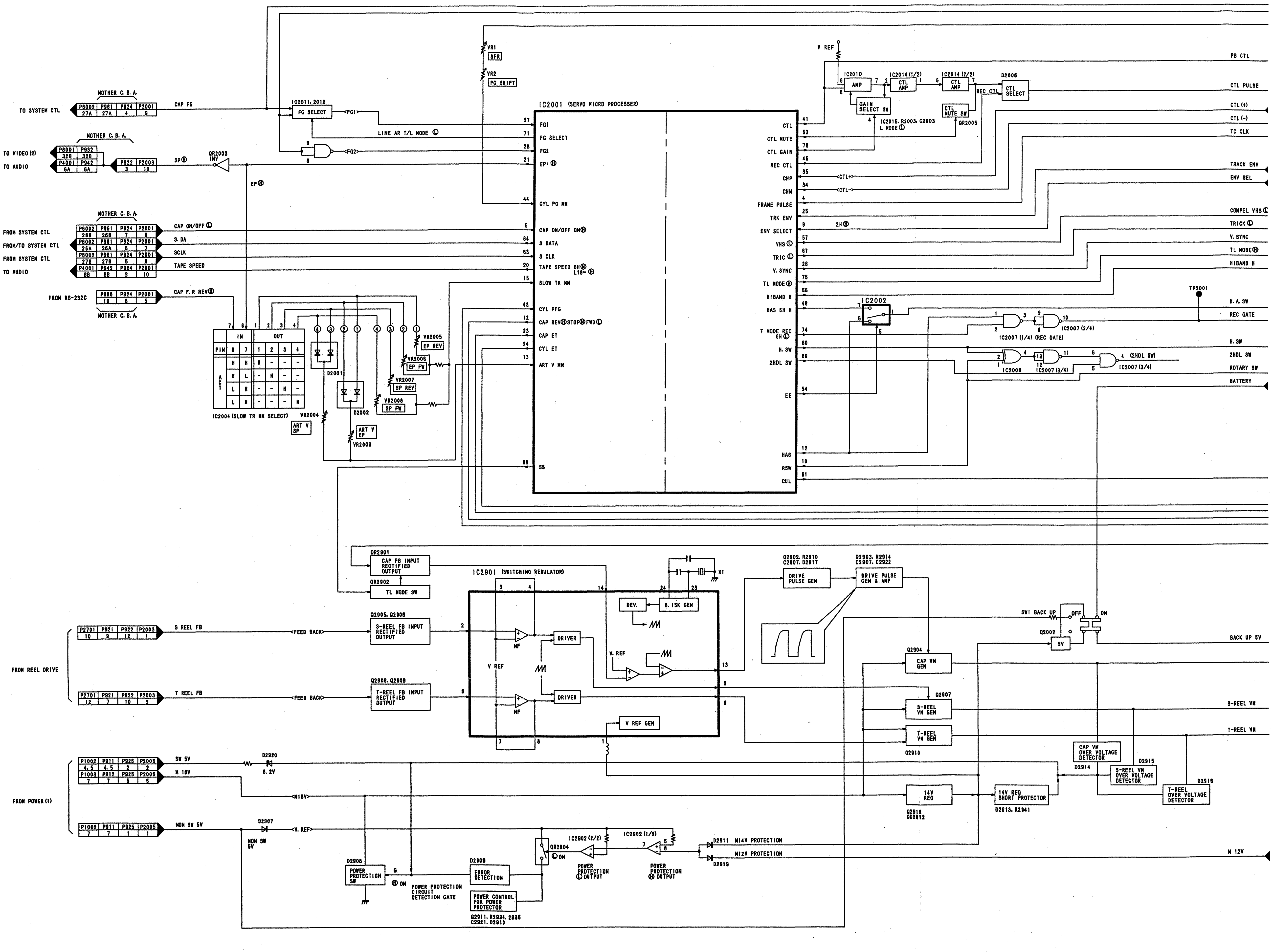

MOTHER C. B. A.
FROM REEL DRIVE
SF PHOTO
SR PHOTO
TO REEL DRIVE
T REEL RSF
S REEL RSF
TO VIDEO (2)
TO AUDIO
D REC (H)
TO SERVO
CAP ON
IC6
S PHOTO
T PHOTO
SENSOR LED
S. PHOTO TR
T. PHOTO TR
Q1
12V
QR1
CASS. SW
DEW SENSOR
Q6, Q7, D9
DEW DET.
FROM VIDEO (2)
PB NG (H)
(NOT USED)
FROM REAR JACK
SERIES IN
1SHOT IN
FROM VIDEO (3)
NO VIDEO (H)
SAFETY TAB SW
MODE SWITCH
MODE PLAY
MODE LOAD
MODE STOP
MODE EJECT
IC5
DECORDER
IC8
Q6
REEL SOLENOID
REEL DRIVE
REEL SOL.
QR8, D10, Q2~Q5
REEL SOL. DRIVE
ALARM IN
REER JACK
REMOTE IN
IC4, D2
REMOTE CONVERTER
V CNT
IC7
FROM SERVO
TC CLK
H SW
REC GATE (L)
5V
RESET
IC3
X1
REF OSC
IC2
IC1
A5V
IC2501
IC2505
TP2501
IC2506
SW
IC2503
IC2502
IC2507
QR2501
QR2502
QR2503
QR2504
QR2505
S-REEL ET
V-REF
T-REEL ET
CHANGE
TQU
IC11
V. REF
+12V
QR7
QR9
POWER OFF (L)
BIAS PRTCT
TO POWER SUPPLY
LOADING Ⓜ -
LOADING Ⓜ +
LOADING MOTOR
IC10
LOADING MOTOR DRIVE
QR8
SPEED CONTROL
SDA F
SCK F
TO FRONT (1)
SDA S
SCK S
CAP ON
CAP FG
CTL
FROM SERVO
SUPPLY REEL FG
TAKE UP REEL FG
FROM REEL DRIVE
IC201
LATCH
DEW
D REC
R CHECK
V CNT
TO IC7 PIN9
QR6201
QR6202
QR6203
QR6204
DEW OUT
REC OUT
REC CHECK OUT
SERIES OUT
TO REAR JACK (NOT USED)
IC202
EE L
EX REC L
MUTE
TAPE END
WARNING
A. R. SEL
A. RECOVER
A. OUT
QR6205
QR6206
QR6207
QR6208
QR6209
QR6210
TO VIDEO (2)
TAPE END OUT
WARNING OUT
ALARM RESET IN
ALARM RECOVER
ALARM OUT
TO REAR JACK
ALARM
TO IC1 PIN23
IC8
IC9
MM
QR3
QR4
QR5
QR6
CAMERA SW OUT

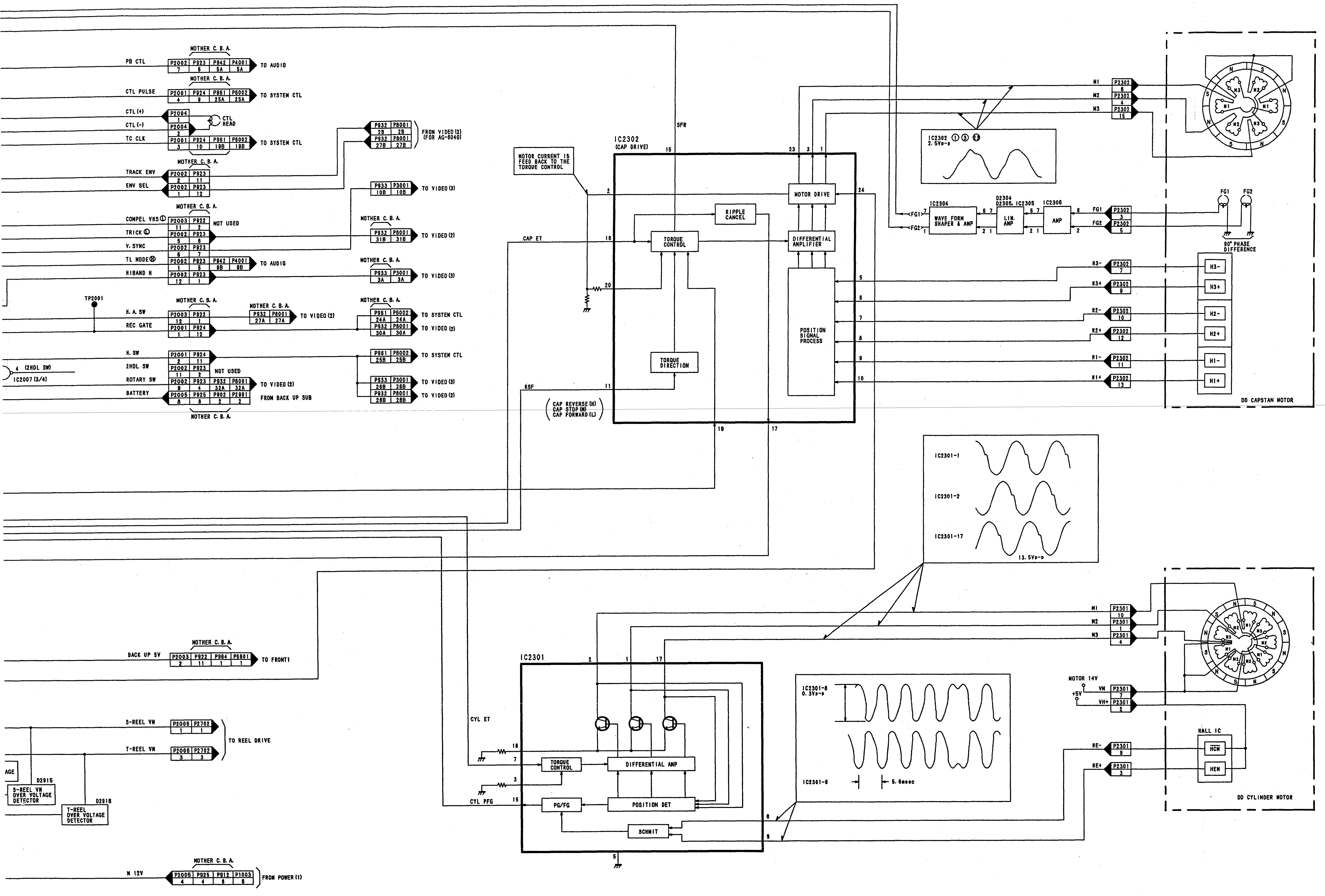
IC1

PIN	PORT	FUNCTION	ACTIVE		FUNCTION	PORT	PIN
3	P63	T REEL RSF	L/H	L	CNT1	P30	47
4	P62			L	CNT2	P31	46
5	P61	S REEL RSF	L/H	H	CNT3	P32	45
6	P60			H	CNT4	P33	44
7	P57	D REC	H	H	CNT5	P64	2
11	P53	RESET	L	-	S DAC	A04	66
15	EX1	GND	GND	-	T DAC	A05	65
31	OSC2	REF. OSC	-	-	SF AD	A02	68
32	OSC1		-	-	SR AD	A03	67
33	VSS	GND	GND	-	AD2	A06	64
34	X1	GND	GND	-	AD3	A07	63
16	RST	RESET	L	+5V	+5V	AVDD	72
17	P47	CAP ON	H		V REF	V REF	71
36	P17	SUPPLY PHOTO	-		V REF	V REF	62
37	P16	TAKE UP PHOTO	-	GND	GND	AVSS	60
84	P66	SENSOR LED	-	-	NC	S/H	61
69	P01	CASSETTE SW	L	L	POWER L	P93	56
70	A00	DEW	H	-	BIAS	P94	55
38	P15	PB NG	H	H	UNLOADING	P92	57
39	P14	SERIES IN		H	LOADING	P91	58
40	P13	MODE POSITION	L	H	SPEED DOWN	P90	59
41	P12		L	-	SDA (FRONT)	P96	53
42	P11		L	-	SCK (FRONT)	P97	52
43	P10		L	-	SDA (SERVO)	PSBTO	49
21	P43	MATRIX	-	-	SCK (SERVO)	SB10	48
83	P67	REEL SOLENOID	H	H	CAP ON/DFF	P47	17
24	P40	ALARM IN	L	-	CAP FG	P22	28
29	P21	REMOTE IN	H	-	CTL PULSE	P20	30
27	P24	H SW/TC CL	-	-	S REEL FG	P26	25
				-	T REEL FG	P25	26
				-	D0	P70	81
				-	D1	P71	80
				-	D2	P72	79
				-	D3	P73	78
				-	D4	P74	77
				-	D5	P75	76
				-	D6	P76	75
				-	D7	P77	74
				L	SELECT	P42	22
				L	SELECT	P43	21
				H	ALARM	P41	23
				H	C TYPE1	P44	20
				-	C CNT	P45	19
				H	2H6H	P46	18

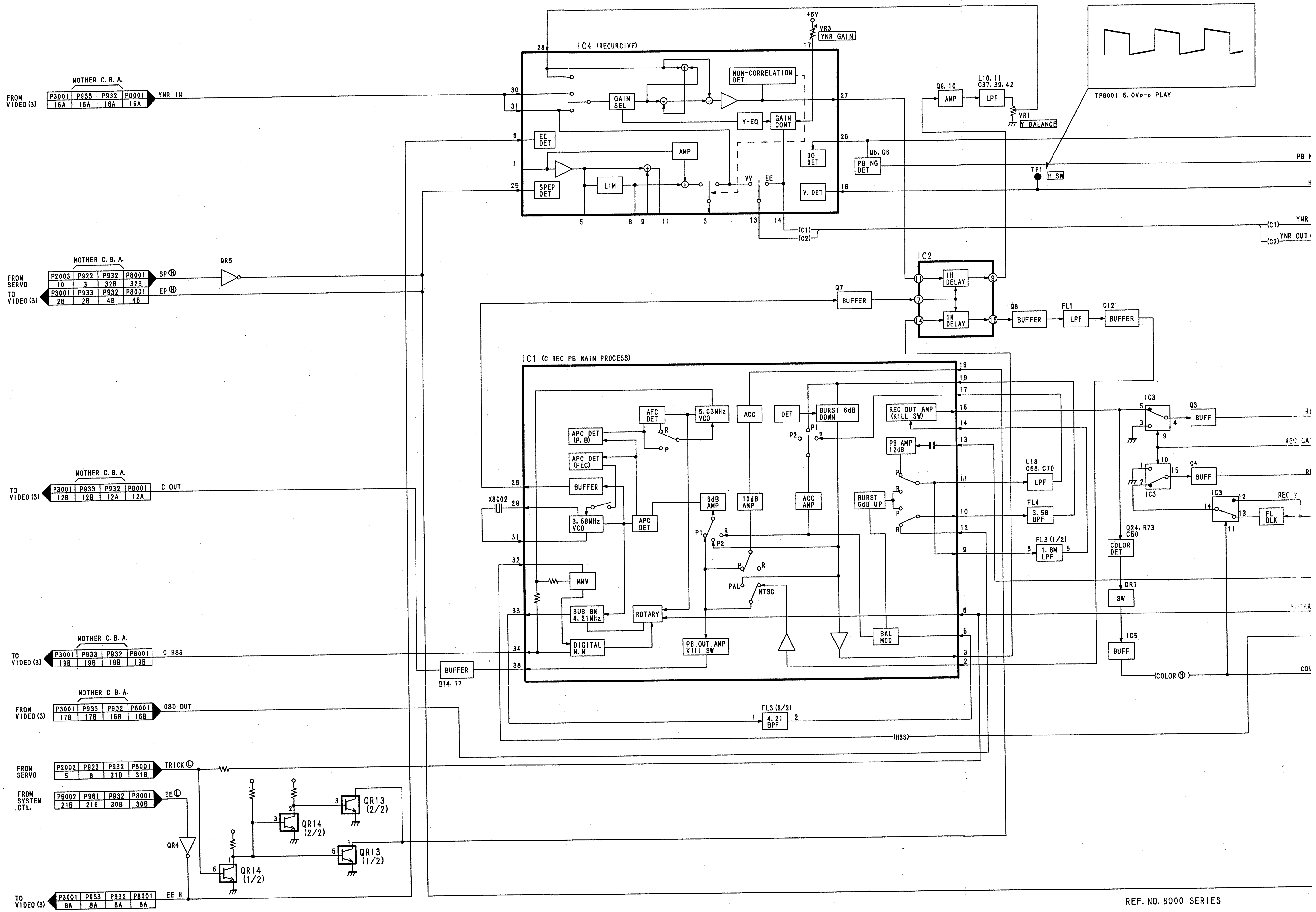
REF. NO. 6000 SERIES

SERVO BLOCK DIAGRAM


TO SYSTEM CTL
MOTHER C. B. A.
P6002 P981 P924 P2001
27A 27A 4 9
CAP FG
TO VIDEO (2)
TO AUDIO
P8001 P932
32B 32B
P4001 P942
6A 6A
P922 P2003
3 10
SP Ⓗ
QR2003 INV
EP Ⓗ
IC2011, 2012
FG SELECT
FG1
FG2
LINE AR T/L MODE Ⓛ
VR1 SFR
VR2 PG SHIFT
IC2001 (SERVO MICRO PROCESSER)
FG1
FG SELECT
FG2
EP: Ⓗ
CYL PG MM
CAP ON/OFF ONⒽ
S DATA
S CLK
TAPE SPEED 6HⒽ L18~Ⓗ
SLOW TR MM
CYL PFG
CAP REVⒽSTOPⒽFWDⓁ
CAP ET
CYL ET
ART V MM
SS
CTL
CTL MUTE
CTL GAIN
REC CTL
CHP
CHM
FRAME PULSE
TRK ENV
ENV SELECT
VHS Ⓛ
TRIC Ⓛ
V. SYNC
TL MODE Ⓗ
HIBAND H
HAS SH H
T MODE REC 6H Ⓛ
H. SW
2HDL SW
EE
HAS
RSW
CUL
FROM SYSTEM CTL
FROM/TO SYSTEM CTL
FROM SYSTEM CTL
TO AUDIO
CAP ON/OFF Ⓛ
S. DA
SCLK
TAPE SPEED
FROM RS-232C
P986 P924 P2001
CAP F. R REV Ⓗ
IN OUT
PIN 6 7 1 2 3 4
ACT
IC2004 (SLOW TR MM SELECT)
D2001
D2002
VR2004 ART V SP
VR2003 ART V EP
VR2005 EP REV
VR2006 EP FW
VR2007 SP REV
VR2008 SP FW
V REF
IC2010 AMP
IC2014 (1/2) CTL AMP
IC2014 (2/2) CTL AMP
D2006 CTL SELECT
REC CTL
GAIN SELECT SW
IC2015, R2003, C2003 L MODE Ⓛ
CTL MUTE SW
QR2005
PB CTL
CTL PULSE
CTL (+)
CTL (−)
TC CLK
TRACK ENV
ENV SEL
COMPEL VHS Ⓛ
TRICK Ⓛ
V. SYNC
TL MODE Ⓗ
HIBAND H
2H Ⓗ
TP2001
H. A. SW
REC GATE
IC2002
IC2007 (1/4) (REC GATE)
IC2007 (2/4)
IC2008
IC2007 (3/4)
(2HDL SW)
IC2007 (3/4)
H. SW
2HDL SW
ROTARY SW
BATTERY
QR2901 CAP FB INPUT RECTIFIED OUTPUT
QR2902 TL MODE SW
IC2901 (SWITCHING REGULATOR)
DEV.
8. 15K GEN
X1
DRIVER
V. REF
V REF
NF
V REF GEN
FROM REEL DRIVE
P2701 P921 P922 P2003
S REEL FB
T REEL FB
FEED BACK
Q2905, Q2906 S-REEL FB INPUT RECTIFIED OUTPUT
Q2908, Q2909 T-REEL FB INPUT RECTIFIED OUTPUT
Q2902, R2910 C2807, D2917 DRIVE PULSE GEN
Q2903, R2914 C2907, C2922 DRIVE PULSE GEN & AMP
SW1 BACK UP OFF ON
Q2002 5V
BACK UP 5V
Q2904 CAP VM GEN
Q2907 S-REEL VM GEN
T-REEL VM GEN
Q2910
S-REEL VM
T-REEL VM
CAP VM OVER VOLTAGE DETECTOR
D2914
D2915 S-REEL VM OVER VOLTAGE DETECTOR
D2916 T-REEL OVER VOLTAGE DETECTOR
14V REG
Q2912 QD2812
14V REG SHORT PROTECTOR
D2913, R2941
FROM POWER (1)
P1002 P911 P925 P2005
P1003 P912 P925 P2005
SW 5V
M 18V
D2920 8.2V
NON SW 5V
D2907
V. REF
D2908 POWER PROTECTION SW
Ⓗ ON
POWER PROTECTION CIRCUIT DETECTION GATE
D2909 ERROR DETECTION
POWER CONTROL FOR POWER PROTECTOR
Q2911, R2934, 2935 C2921, D2910
QR2904 Ⓛ ON
IC2902 (2/2)
IC2902 (1/2)
POWER PROTECTION Ⓛ OUTPUT
POWER PROTECTION Ⓗ OUTPUT
D2911 M14V PROTECTION
M12V PROTECTION
D2919
M 12V

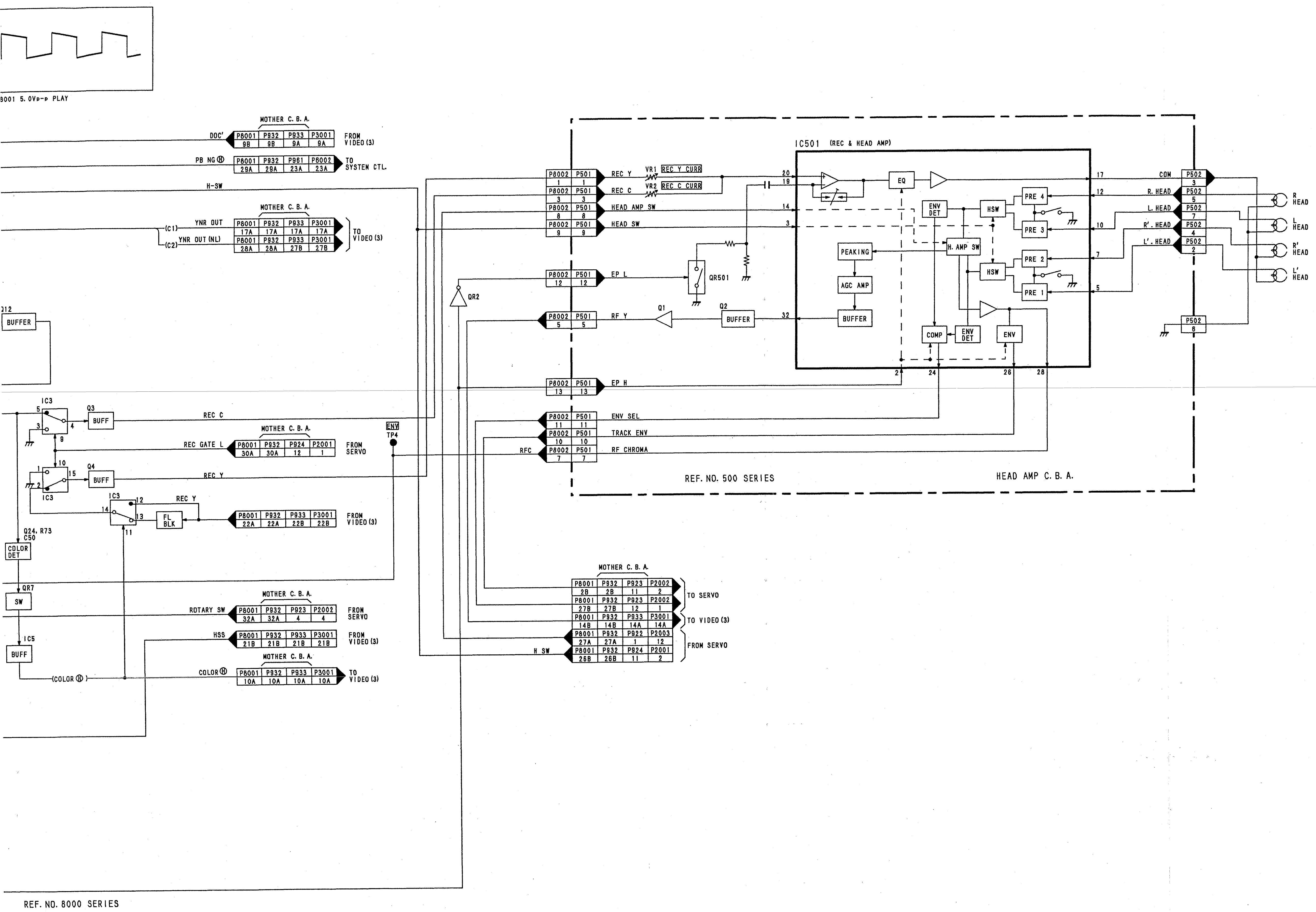

MOTHER C. B. A.
PB CTL
P2002 7
P923 6
P942 5A
P4001 5A
TO AUDIO
MOTHER C. B. A.
CTL PULSE
P2001 4
P924 9
P961 25A
P6002 25A
TO SYSTEM CTL
CTL (+)
P2004 1
CTL (-)
P2004 2
CTL HEAD
TC CLK
P2001 3
P924 10
P961 19B
P6002 19B
TO SYSTEM CTL
P932 2B
P8001 2B
P932 27B
P8001 27B
FROM VIDEO (2)
(FOR AG-6040)
MOTHER C. B. A.
TRACK ENV
P2002 2
P923 11
ENV SEL
P2002 1
P923 12
P933 10B
P3001 10B
TO VIDEO (3)
MOTHER C. B. A.
COMPEL VHS ①
P2003 11
P922 2
NOT USED
TRICK ①
P2002 5
P923 8
MOTHER C. B. A.
P932 31B
P8001 31B
TO VIDEO (2)
V. SYNC
P2002 6
P923 7
TL MODE Ⓗ
P2002 1
P923 5
P942 9B
P4001 9B
TO AUDIO
HIBAND H
P2002 12
P923 1
MOTHER C. B. A.
P933 3A
P3001 3A
TO VIDEO (3)
TP2001
MOTHER C. B. A.
H. A. SW
P2003 12
P922 1
MOTHER C. B. A.
P932 27A
P8001 27A
TO VIDEO (2)
REC GATE
P2001 1
P924 12
MOTHER C. B. A.
P961 24A
P6002 24A
TO SYSTEM CTL
P932 30A
P8001 30A
TO VIDEO (2)
H. SW
P2001 2
P924 11
P961 25B
P6002 25B
TO SYSTEM CTL
4 (2HDL SW)
IC2007 (3/4)
2HDL SW
P2002 11
P923 2
NOT USED
ROTARY SW
P2002 9
P923 4
P932 32A
P8001 32A
TO VIDEO (2)
P933 26B
P3001 26B
TO VIDEO (3)
BATTERY
P2005 8
P925 8
P902 2
P2991 2
FROM BACK UP SUB
P932 28B
P8001 28B
TO VIDEO (2)
MOTHER C. B. A.
SFR
IC2302
(CAP DRIVE)
MOTOR CURRENT IS FEED BACK TO THE TORQUE CONTROL
15
23
3
1
2
24
MOTOR DRIVE
RIPPLE CANCEL
CAP ET
16
TORQUE CONTROL
DIFFERENTIAL AMPLIFIER
20
5
6
7
8
9
10
POSITION SIGNAL PROCESS
TORQUE DIRECTION
RSF
11
(CAP REVERSE (H)
CAP STOP (M)
CAP FORWARD (L))
19
17
IC2302 ① ③ ㉓
2.5Vp-p
IC2304
<FG1>
<FG2>
7
1
WAVE FORM SHAPER & AMP
6 7
2 1
D2304
D2305, IC2305
LIM. AMP
6 7
2 1
IC2306
AMP
6
2
M1
P2302 6
M2
P2302 4
M3
P2302 15
FG1
P2302 3
FG2
P2302 5
FG1
FG2
90° PHASE DIFFERENCE
H3-
P2302 7
H3+
P2302 9
H2-
P2302 10
H2+
P2302 12
H1-
P2302 11
H1+
P2302 13
H3-
H3+
H2-
H2+
H1-
H1+
N
S
M1
M2
M3
DD CAPSTAN MOTOR
IC2301-1
IC2301-2
IC2301-17
13.5Vp-p
MOTHER C. B. A.
BACK UP 5V
P2003 2
P922 11
P964 1
P6601 1
TO FRONT1
IC2301
2
1
17
CYL ET
18
7
TORQUE CONTROL
DIFFERENTIAL AMP
3
CYL PFG
15
PG/FG
POSITION DET
SCHMIT
8
9
5
IC2301-8
0.3Vp-p
IC2301-9
5.6msec
M1
P2301 10
M2
P2301 1
M3
P2301 4
MOTOR 14V
+5V
VM
P2301 7
VH+
P2301 2
HALL IC
HCM
HEM
HE-
P2301 9
HE+
P2301 3
DD CYLINDER MOTOR
S-REEL VM
P2006 1
P2702 1
TO REEL DRIVE
T-REEL VM
P2008 3
P2702 3
AGE
D2915
S-REEL VM OVER VOLTAGE DETECTOR
D2916
T-REEL OVER VOLTAGE DETECTOR
MOTHER C. B. A.
M 12V
P2005 4
P925 4
P912 6
P1003 6
FROM POWER (1)

VIDEO 2 BLOCK DIAGRAM



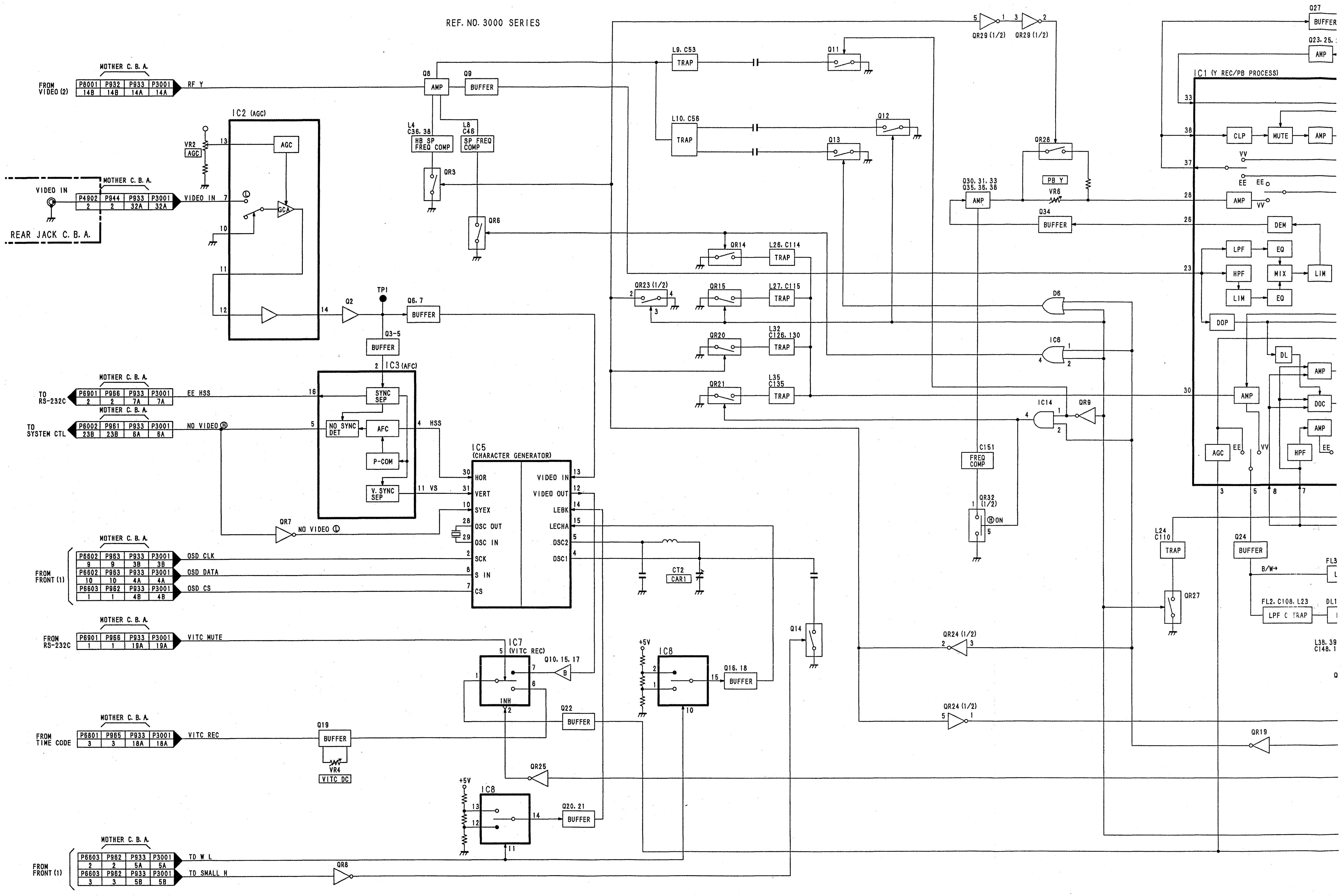
IC4 (RECURCIVE)
+5V
VR3
YNR GAIN
NON-CORRELATION DET
GAIN SEL
Y-EQ
GAIN CONT
EE DET
AMP
LIM
SPEP DET
DO DET
V. DET
VV
EE
MOTHER C. B. A.
FROM VIDEO (3)
P3001 P933 P932 P8001
16A 16A 16A 16A
YNR IN
Q9, 10
AMP
L10, 11 C37, 39, 42
LPF
VR1
Y BALANCE
TP8001 5. 0Vp-p PLAY
Q5, Q6
PB NG DET
TP1
H SW
PB
(C1)
(C2)
YNR
YNR OUT
FROM SERVO
TO VIDEO (3)
P2003 P922 P932 P8001
10 3 32B 32B
P3001 P933 P932 P8001
2B 2B 4B 4B
SP Ⓗ
EP Ⓗ
QR5
IC2
1H DELAY
Q7
BUFFER
Q8
BUFFER
FL1
LPF
Q12
BUFFER
IC1 (C REC PB MAIN PROCESS)
AFC DET
5. 03MHz VCO
ACC
DET
BURST 6dB DOWN
REC OUT AMP (KILL SW)
APC DET (P. B)
APC DET (REC)
PB AMP 12dB
BUFFER
X8002
3. 58MHz VCO
APC DET
6dB AMP
10dB AMP
ACC AMP
BURST 6dB UP
L18 C68, C70
LPF
FL4
3. 58 BPF
FL3 (1/2)
1. 6M LPF
MMV
SUB BM 4. 21MHz
ROTARY
DIGITAL M. M
PB OUT AMP KILL SW
BAL MOD
PAL
NTSC
TO VIDEO (3)
P3001 P933 P932 P8001
12B 12B 12A 12A
C OUT
P3001 P933 P932 P8001
19B 19B 19B 19B
C HSS
BUFFER
Q14, 17
FROM VIDEO (3)
P3001 P933 P932 P8001
17B 17B 16B 16B
OSD OUT
FL3 (2/2)
4. 21 BPF
(HSS)
IC3
Q3
BUFF
Q4
BUFF
REC GA
REC Y
FL BLK
Q24, R73 C50
COLOR DET
QR7
SW
IC5
BUFF
(COLOR Ⓗ)
COL
FROM SERVO
P2002 P923 P932 P8001
5 8 31B 31B
TRICK Ⓛ
FROM SYSTEM CTL.
P6002 P961 P932 P8001
21B 21B 30B 30B
EE Ⓛ
QR4
QR14 (2/2)
QR13 (2/2)
QR13 (1/2)
QR14 (1/2)
TO VIDEO (3)
P3001 P933 P932 P8001
8A 8A 8A 8A
EE H

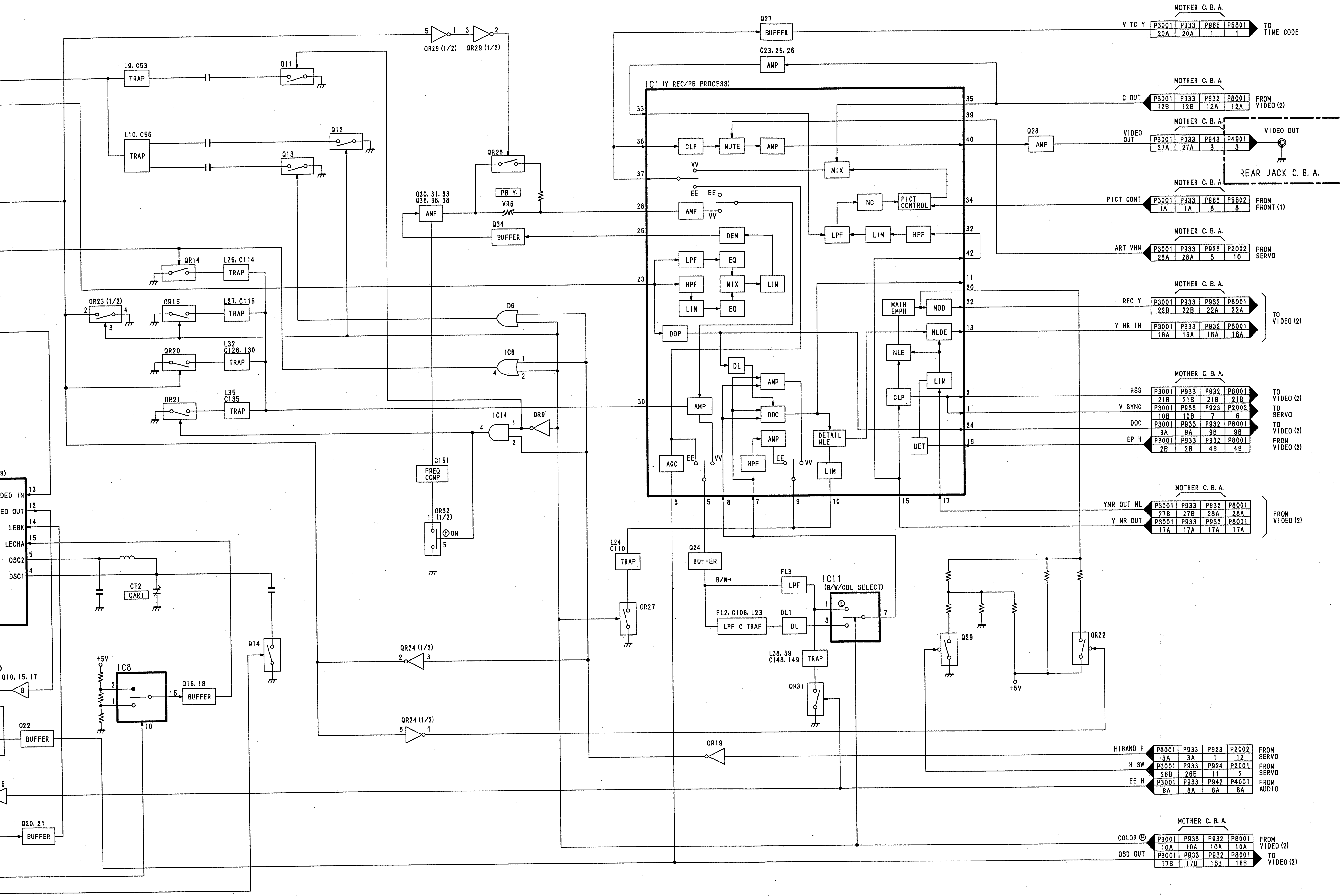
REF. NO. 8000 SERIES


8001 5.0Vp-p PLAY
MOTHER C. B. A.
DOC'
P8001 9B P932 9B P933 9A P3001 9A
FROM VIDEO (3)
PB NG Ⓗ
P8001 29A P932 29A P961 23A P6002 23A
TO SYSTEM CTL.
H-SW
YNR OUT
YNR OUT (NL)
(C1)
(C2)
P8001 17A P932 17A P933 17A P3001 17A
P8001 28A P932 28A P933 27B P3001 27B
TO VIDEO (3)
BUFFER
IC3
Q3
BUFF
REC C
REC GATE L
P8001 30A P932 30A P924 12 P2001 1
FROM SERVO
ENV
TP4
RFC
Q4
BUFF
REC Y
FL BLK
P8001 22A P932 22A P933 22B P3001 22B
FROM VIDEO (3)
Q24, R73
C50
COLOR DET
QR7
SW
ROTARY SW
P8001 32A P932 32A P923 4 P2002 4
FROM SERVO
IC5
BUFF
HSS
P8001 21B P932 21B P933 21B P3001 21B
FROM VIDEO (3)
COLOR Ⓗ
(COLOR Ⓗ)
P8001 10A P932 10A P933 10A P3001 10A
TO VIDEO (3)
REF. NO. 8000 SERIES
P8002 1 P501 1
REC Y
VR1 REC Y CURR
P8002 3 P501 3
REC C
VR2 REC C CURR
P8002 8 P501 8
HEAD AMP SW
P8002 9 P501 9
HEAD SW
P8002 12 P501 12
EP L
QR501
QR2
P8002 5 P501 5
RF Y
Q1
Q2
BUFFER
P8002 13 P501 13
EP H
P8002 11 P501 11
ENV SEL
P8002 10 P501 10
TRACK ENV
P8002 7 P501 7
RF CHROMA
IC501 (REC & HEAD AMP)
EQ
ENV DET
HSW
PRE 4
PRE 3
PRE 2
PRE 1
H. AMP SW
PEAKING
AGC AMP
BUFFER
COMP
ENV DET
ENV
20
19
14
3
32
2
24
26
28
17
12
10
7
5
COM
R. HEAD
L. HEAD
R'. HEAD
L'. HEAD
P502 3
P502 5
P502 7
P502 4
P502 2
P502 6
R HEAD
L HEAD
R' HEAD
L' HEAD
REF. NO. 500 SERIES
HEAD AMP C. B. A.
MOTHER C. B. A.
P8001 2B P932 2B P923 11 P2002 2
P8001 27B P932 27B P923 12 P2002 1
TO SERVO
P8001 14B P932 14B P933 14A P3001 14A
TO VIDEO (3)
P8001 27A P932 27A P922 1 P2003 12
H SW
P8001 26B P932 26B P924 11 P2001 2
FROM SERVO

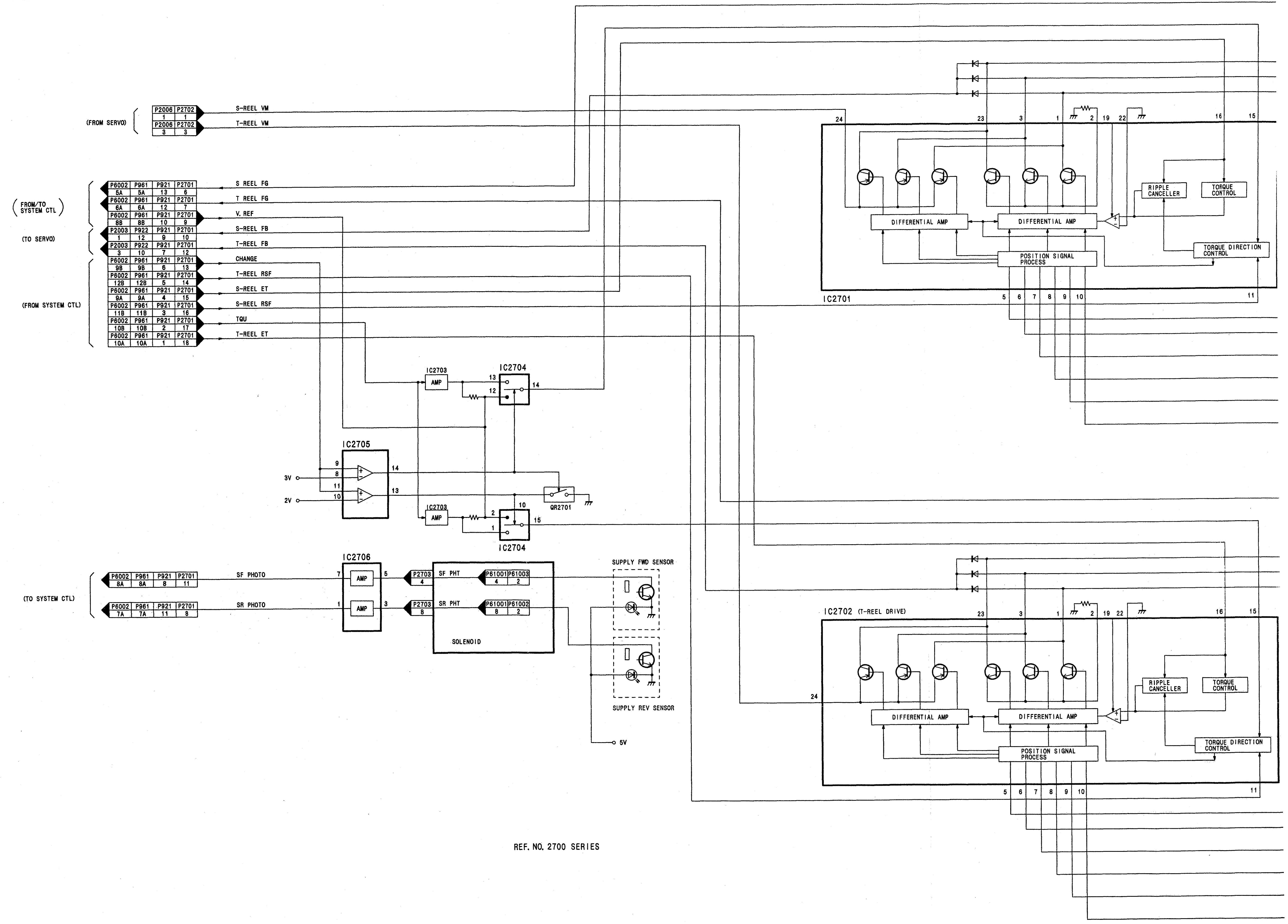
VIDEO 3 BLOCK DIAGRAM

REF. NO. 3000 SERIES

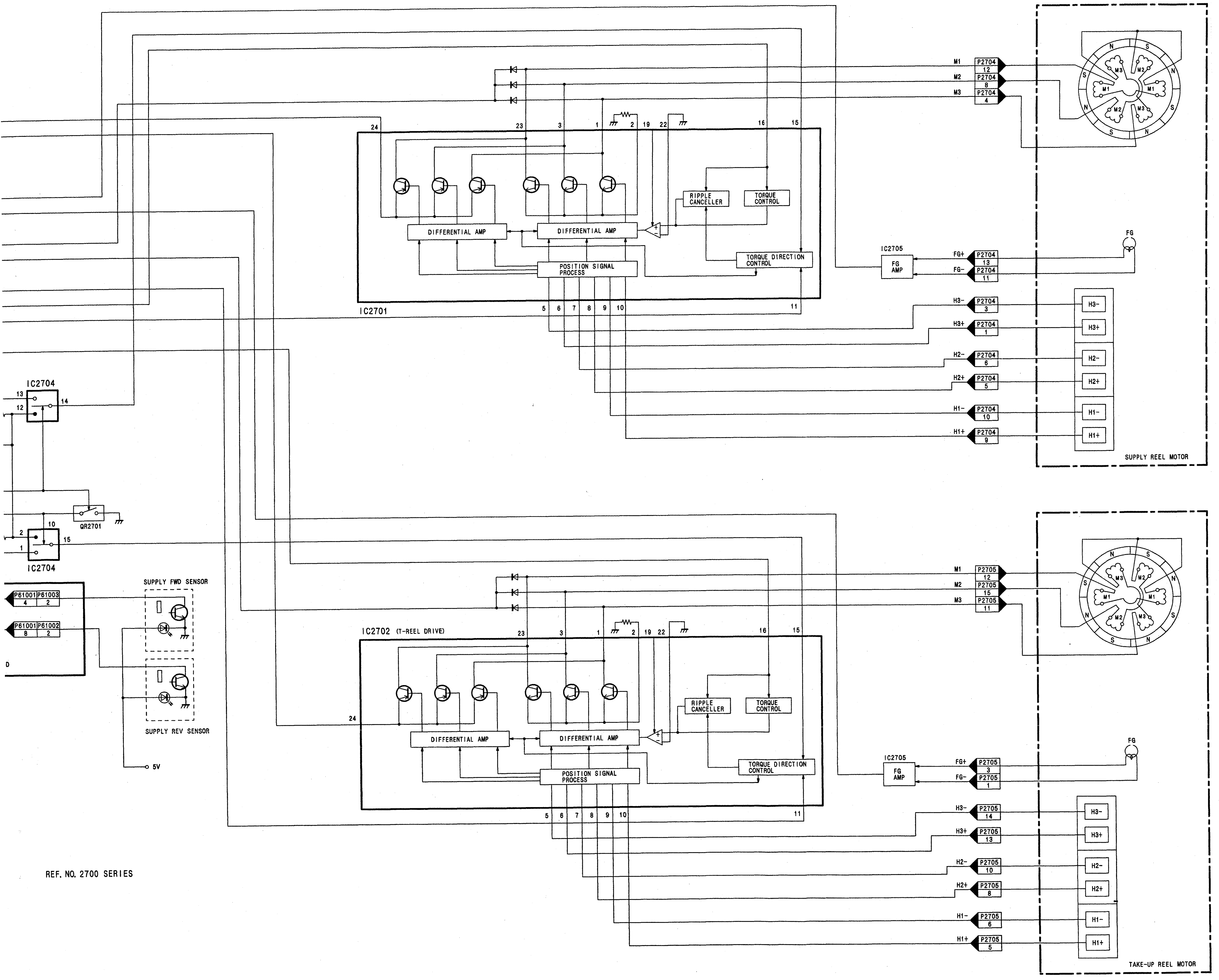

FROM VIDEO (2)
MOTHER C. B. A.
P8001 14B
P932 14B
P933 14A
P3001 14A
RF Y
VIDEO IN
REAR JACK C. B. A.
P4902 2
P944 2
P933 32A
P3001 32A
VIDEO IN
IC2 (AGC)
VR2 AGC
AGC
GCA
Q2
TP1
Q6, 7 BUFFER
Q3-5 BUFFER
IC3 (AFC)
SYNC SEP
NO SYNC DET
AFC
P-COM
V. SYNC SEP
HSS
VS
TO RS-232C
P6901 2
P966 2
P933 7A
P3001 7A
EE HSS
TO SYSTEM CTL
P6002 23B
P961 23B
P933 6A
P3001 6A
NO VIDEO
QR7
NO VIDEO
IC5 (CHARACTER GENERATOR)
HOR
VERT
SYEX
OSC OUT
OSC IN
SCK
S IN
CS
VIDEO IN
VIDEO OUT
LEBK
LECHA
DSC2
DSC1
FROM FRONT (1)
P6602 9
P963 9
P933 3B
P3001 3B
OSD CLK
P6602 10
P963 10
P933 4A
P3001 4A
OSD DATA
P6603 1
P962 1
P933 4B
P3001 4B
OSD CS
CT2 CAR1
FROM RS-232C
P6901 1
P966 1
P933 19A
P3001 19A
VITC MUTE
IC7 (VITC REC)
INH
Q10, 15, 17
Q22 BUFFER
FROM TIME CODE
P6801 3
P965 3
P933 18A
P3001 18A
VITC REC
Q19 BUFFER
VR4 VITC DC
QR25
+5V
IC8
Q20, 21 BUFFER
IC8
Q16, 18 BUFFER
Q14
FROM FRONT (1)
P6603 2
P962 2
P933 5A
P3001 5A
TD W L
P6603 3
P962 3
P933 5B
P3001 5B
TD SMALL H
QR8
Q8 AMP
Q9 BUFFER
L4 C36, 38 HB SP FREQ COMP
L8 C46 SP FREQ COMP
QR3
QR6
L9, C53 TRAP
Q11
L10, C56 TRAP
Q12
Q13
QR14
L26, C114 TRAP
QR23 (1/2)
QR15
L27, C115 TRAP
QR20
L32 C126, 130 TRAP
QR21
L35 C135 TRAP
QR29 (1/2)
QR29 (1/2)
QR28
PB Y
VR6
Q30, 31, 33 Q35, 36, 38 AMP
Q34 BUFFER
D6
IC6
IC14
QR9
C151 FREQ COMP
QR32 (1/2)
ON
QR24 (1/2)
QR24 (1/2)
Q27 BUFFER
Q23, 25
AMP
IC1 (Y REC/PB PROCESS)
CLP
MUTE
AMP
VV
EE
AMP
DEM
LPF
EQ
HPF
MIX
LIM
LIM
EQ
DOP
DL
AMP
AMP
DOC
AMP
AGC
HPF
L24 C110 TRAP
QR27
Q24 BUFFER
B/W
FL3
FL2, C108, L23 LPF C TRAP
DL1
L38, 39 C148, 1
QR19


IC1 (Y REC/PB PROCESS)
CLP
MUTE
AMP
MIX
NC
PICT CONTROL
LPF
LIM
HPF
DEM
EQ
MIX
DOP
DL
DOC
DETAIL NLE
MAIN EMPH
MOD
NLDE
NLE
AGC
EE
VV
Q27
BUFFER
Q23, 25, 26
Q28
L9, C53
TRAP
L10, C56
Q11
Q12
Q13
QR29 (1/2)
QR28
PB Y
VR6
Q30, 31, 33
Q35, 36, 38
Q34
QR14
L26, C114
QR23 (1/2)
QR15
L27, C115
QR20
L32
C126, 130
QR21
L35
C135
D6
IC6
IC14
QR9
C151
FREQ COMP
QR32 (1/2)
Ⓗ ON
L24
C110
QR27
Q24
B/W→
FL3
IC11
(B/W/COL SELECT)
FL2, C108, L23
LPF C TRAP
DL1
L38, 39
C148, 149
QR31
Q29
QR22
+5V
QR24 (1/2)
QR19
Q14
IC8
Q16, 18
Q10, 15, 17
Q22
Q20, 21
CT2
CAR1
VIDEO IN
VIDEO OUT
LEBK
LECHA
OSC2
OSC1
MOTHER C. B. A.
VITC Y
P3001 | P933 | P965 | P6801
20A | 20A | 1 | 1
TO TIME CODE
C OUT
P3001 | P933 | P932 | P8001
12B | 12B | 12A | 12A
FROM VIDEO (2)
VIDEO OUT
P3001 | P933 | P943 | P4901
27A | 27A | 3 | 3
VIDEO OUT
REAR JACK C. B. A.
PICT CONT
P3001 | P933 | P963 | P6602
1A | 1A | 8 | 8
FROM FRONT (1)
ART VHN
P3001 | P933 | P923 | P2002
28A | 28A | 3 | 10
FROM SERVO
REC Y
P3001 | P933 | P932 | P8001
22B | 22B | 22A | 22A
Y NR IN
P3001 | P933 | P932 | P8001
16A | 16A | 16A | 16A
TO VIDEO (2)
HSS
P3001 | P933 | P932 | P8001
21B | 21B | 21B | 21B
TO VIDEO (2)
V SYNC
P3001 | P933 | P923 | P2002
10B | 10B | 7 | 6
TO SERVO
DOC
P3001 | P933 | P932 | P8001
9A | 9A | 9B | 9B
TO VIDEO (2)
EP H
P3001 | P933 | P932 | P8001
2B | 2B | 4B | 4B
FROM VIDEO (2)
YNR OUT NL
P3001 | P933 | P932 | P8001
27B | 27B | 28A | 28A
Y NR OUT
P3001 | P933 | P932 | P8001
17A | 17A | 17A | 17A
FROM VIDEO (2)
HIBAND H
P3001 | P933 | P923 | P2002
3A | 3A | 1 | 12
FROM SERVO
H SW
P3001 | P933 | P924 | P2001
26B | 26B | 11 | 2
FROM SERVO
EE H
P3001 | P933 | P942 | P4001
8A | 8A | 8A | 8A
FROM AUDIO
COLOR Ⓗ
P3001 | P933 | P932 | P8001
10A | 10A | 10A | 10A
FROM VIDEO (2)
OSD OUT
P3001 | P933 | P932 | P8001
17B | 17B | 16B | 16B
TO VIDEO (2)

REEL DRIVE BLOCK DIAGRAM

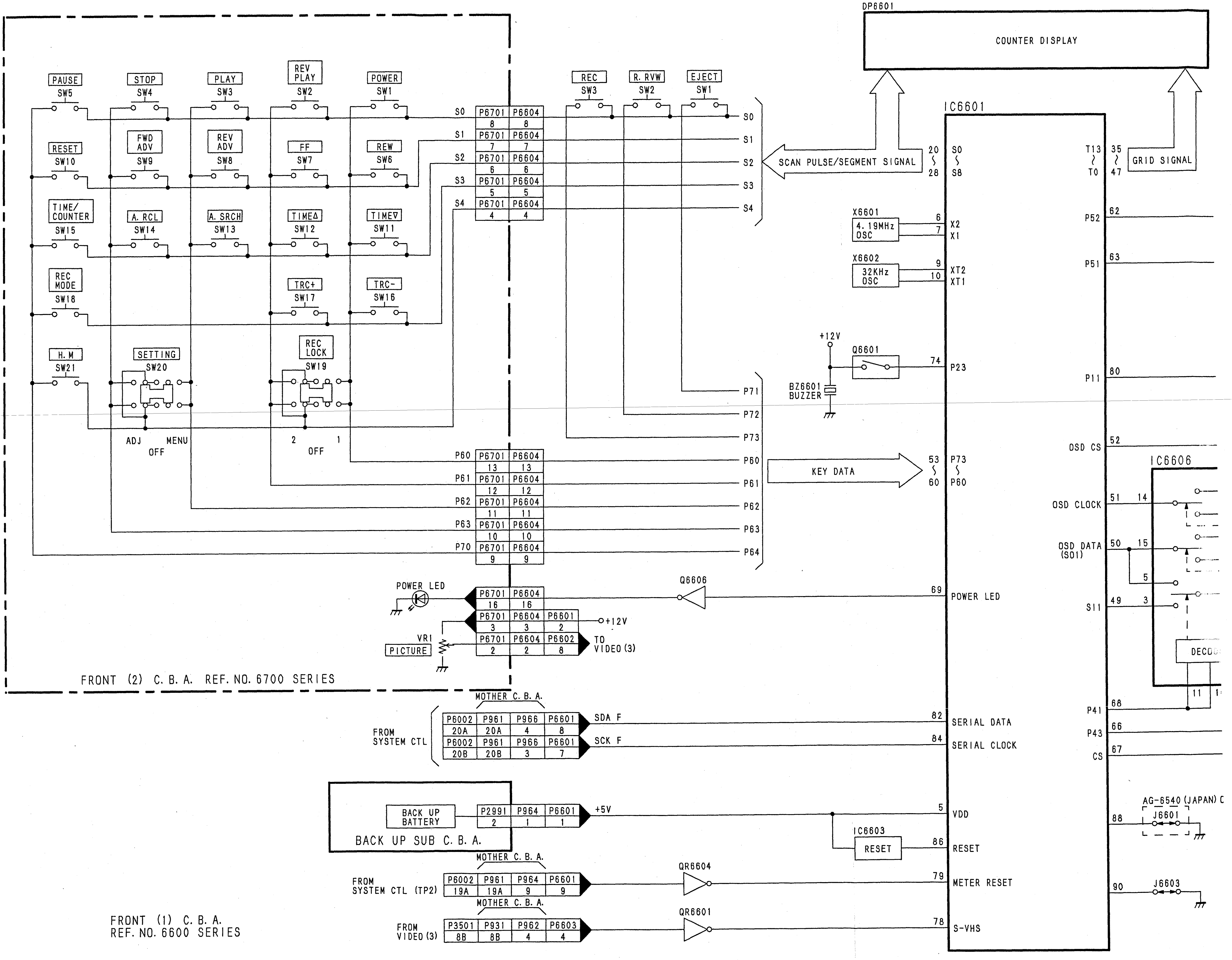

(FROM SERVO)
P2006 P2702 1 1
S-REEL VM
P2006 P2702 3 3
T-REEL VM
(FROM/TO SYSTEM CTL)
P6002 P961 P921 P2701 5A 5A 13 6
S REEL FG
P6002 P961 P921 P2701 6A 6A 12 7
T REEL FG
P6002 P961 P921 P2701 8B 8B 10 9
V. REF
(TO SERVO)
P2003 P922 P921 P2701 1 12 9 10
S-REEL FB
P2003 P922 P921 P2701 3 10 7 12
T-REEL FB
(FROM SYSTEM CTL)
P6002 P961 P921 P2701 9B 9B 6 13
CHANGE
P6002 P961 P921 P2701 12B 12B 5 14
T-REEL RSF
P6002 P961 P921 P2701 9A 9A 4 15
S-REEL ET
P6002 P961 P921 P2701 11B 11B 3 16
S-REEL RSF
P6002 P961 P921 P2701 10B 10B 2 17
TQU
P6002 P961 P921 P2701 10A 10A 1 18
T-REEL ET
IC2703
AMP
IC2704
13
12
14
IC2705
9
8
11
10
3V
2V
14
13
QR2701
IC2703
AMP
2
1
10
15
IC2704
IC2706
AMP
AMP
7
1
5
3
(TO SYSTEM CTL)
P6002 P961 P921 P2701 8A 8A 8 11
SF PHOTO
P6002 P961 P921 P2701 7A 7A 11 8
SR PHOTO
P2703 4
SF PHT
P61001 P61003 4 2
P2703 8
SR PHT
P61001 P61002 8 2
SOLENOID
SUPPLY FWD SENSOR
SUPPLY REV SENSOR
5V
24
23
3
1
2
19
22
16
15
RIPPLE CANCELLER
TORQUE CONTROL
DIFFERENTIAL AMP
DIFFERENTIAL AMP
POSITION SIGNAL PROCESS
TORQUE DIRECTION CONTROL
IC2701
5
6
7
8
9
10
11
IC2702 (T-REEL DRIVE)
23
3
1
2
19
22
16
15
24
RIPPLE CANCELLER
TORQUE CONTROL
DIFFERENTIAL AMP
DIFFERENTIAL AMP
POSITION SIGNAL PROCESS
TORQUE DIRECTION CONTROL
5
6
7
8
9
10
11

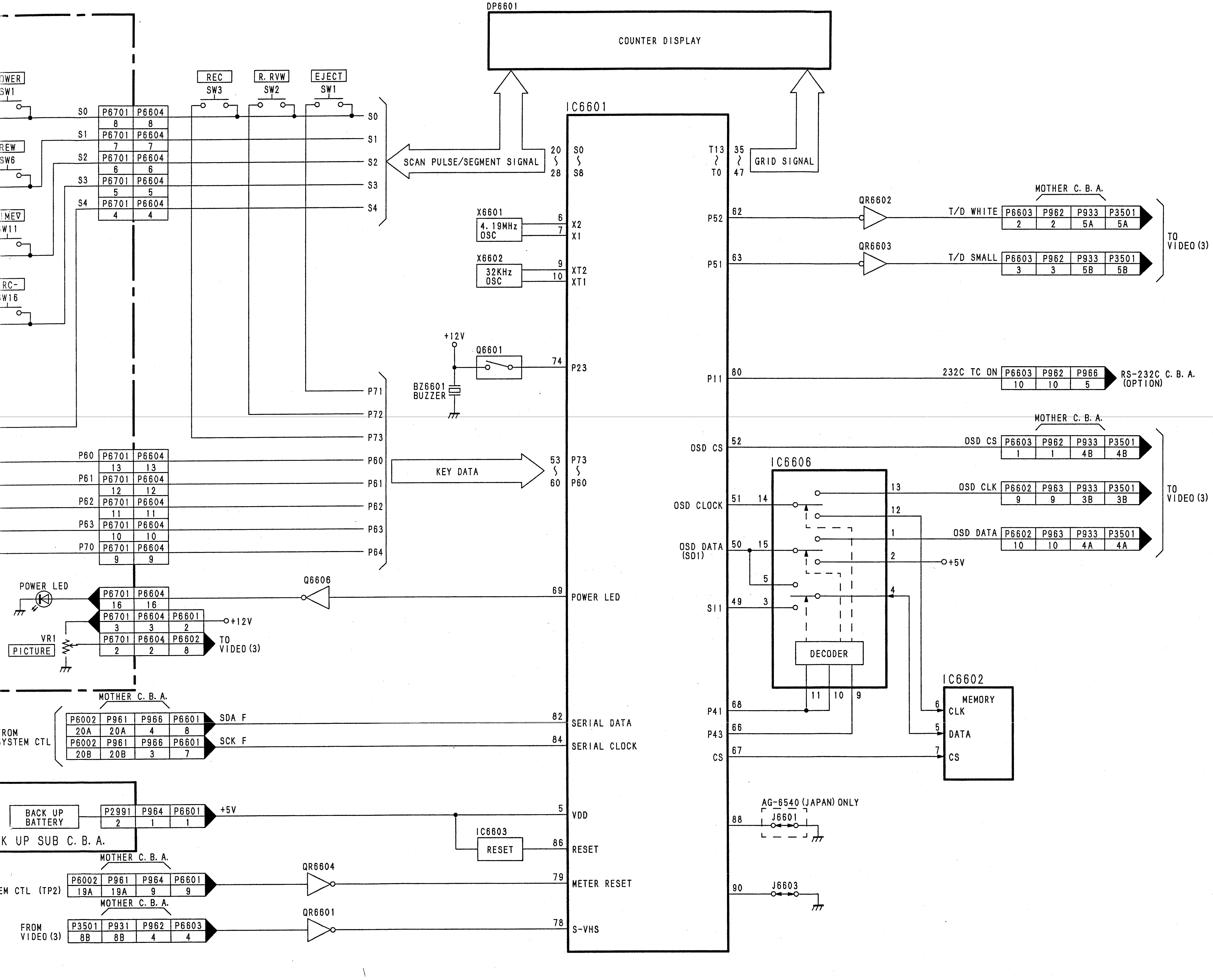
REF. NO. 2700 SERIES


IC2701
IC2702 (T-REEL DRIVE)
DIFFERENTIAL AMP
DIFFERENTIAL AMP
POSITION SIGNAL PROCESS
RIPPLE CANCELLER
TORQUE CONTROL
TORQUE DIRECTION CONTROL
IC2705
FG AMP
IC2704
QR2701
M1
M2
M3
FG+
FG-
H3-
H3+
H2-
H2+
H1-
H1+
P2704
P2705
P61001
P61002
P61003
FG
N
S
SUPPLY REEL MOTOR
TAKE-UP REEL MOTOR
SUPPLY FWD SENSOR
SUPPLY REV SENSOR
5V
D

REF. NO. 2700 SERIES

FRONT 1 AND 2 BLOCK DIAGRAM


PAUSE
SW5
STOP
SW4
PLAY
SW3
REV PLAY
SW2
POWER
SW1
RESET
SW10
FWD ADV
SW9
REV ADV
SW8
FF
SW7
REW
SW6
TIME/ COUNTER
SW15
A. RCL
SW14
A. SRCH
SW13
TIMEΔ
SW12
TIME∇
SW11
REC MODE
SW18
TRC+
SW17
TRC-
SW16
H. M
SW21
SETTING
SW20
REC LOCK
SW19
ADJ
MENU
OFF
2
1
OFF
S0
S1
S2
S3
S4
P6701
P6604
P60
P61
P62
P63
P70
REC
SW3
R. RVW
SW2
EJECT
SW1
S0
S1
S2
S3
S4
P71
P72
P73
P60
P61
P62
P63
P64
POWER LED
VR1
PICTURE
P6601
P6602
+12V
TO VIDEO (3)
Q6606
FRONT (2) C. B. A. REF. NO. 6700 SERIES
DP6601
COUNTER DISPLAY
IC6601
SCAN PULSE/SEGMENT SIGNAL
20
28
S0
S8
T13
T0
35
47
GRID SIGNAL
X6601
4. 19MHz OSC
6
7
X2
X1
X6602
32KHz OSC
9
10
XT2
XT1
P52
62
P51
63
+12V
Q6601
74
P23
BZ6601 BUZZER
P11
80
OSD CS
52
KEY DATA
53
60
P73
P60
IC6606
OSD CLOCK
51
14
OSD DATA (S01)
50
15
5
S11
49
3
DECO
69
POWER LED
MOTHER C. B. A.
FROM SYSTEM CTL
P6002
P961
P966
P6601
20A
20B
SDA F
SCK F
82
SERIAL DATA
84
SERIAL CLOCK
P41
68
P43
66
CS
67
11
BACK UP BATTERY
BACK UP SUB C. B. A.
P2991
P964
+5V
5
VDD
IC6603
RESET
86
RESET
AG-6540 (JAPAN) C
J6601
88
MOTHER C. B. A.
FROM SYSTEM CTL (TP2)
19A
QR6604
79
METER RESET
J6603
90
MOTHER C. B. A.
FROM VIDEO (3)
P3501
P931
P962
P6603
8B
QR6601
78
S-VHS
FRONT (1) C. B. A. REF. NO. 6600 SERIES


DP6601
COUNTER DISPLAY
IC6601
SCAN PULSE/SEGMENT SIGNAL
GRID SIGNAL
REC
SW3
R. RVW
SW2
EJECT
SW1
SW1
SW6
SW11
SW16
S0
S1
S2
S3
S4
P6701
P6604
20 S0 ~ 28 S8
T13 ~ T0 35 ~ 47
X6601
4.19MHz OSC
X2
X1
X6602
32KHz OSC
XT2
XT1
+12V
Q6601
BZ6601 BUZZER
74 P23
P71
P72
P73
P60
P61
P62
P63
P64
P70
KEY DATA
53 P73 ~ 60 P60
POWER LED
Q6606
69 POWER LED
P6601
P6602
+12V
VR1
PICTURE
TO VIDEO (3)
MOTHER C. B. A.
P6002
P961
P966
SDA F
SCK F
FROM SYSTEM CTL
82 SERIAL DATA
84 SERIAL CLOCK
BACK UP BATTERY
P2991
P964
+5V
BACK UP SUB C. B. A.
5 VDD
IC6603
RESET
86 RESET
QR6604
SYSTEM CTL (TP2)
79 METER RESET
FROM VIDEO (3)
P3501
P931
P962
P6603
QR6601
78 S-VHS
P52 62
QR6602
T/D WHITE
P51 63
QR6603
T/D SMALL
P933
TO VIDEO (3)
P11 80
232C TC ON
RS-232C C. B. A. (OPTION)
OSD CS 52
IC6606
OSD CLOCK 51
OSD DATA (SD1) 50
SI1 49
DECODER
OSD CS
OSD CLK
OSD DATA
P963
+5V
IC6602
MEMORY
CLK
DATA
CS
P41 68
P43 66
CS 67
AG-6540 (JAPAN) ONLY
J6601
88
90
J6603

SECTION 7

EXPLODED VIEWS & REPLACEMENT PARTS LIST

CONTENTS

SERVICING FIXTURES & TOOLS LIST PRT-2

CHASSIS PARTS SECTION PRT-3

MOVING PARTS SECTION... PRT-5

CASSETTE COMPARTMENT SECTION PRT-6

CHASSIS & FRAME SECTION PRT-8

CASING PARTS SECTION PRT-9

PACKING PARTS SECTION PRT-11

ELECTRICAL REPLACEMENT PARTS SECTION PRT-13

NOTES

1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for saftey. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS (uf), P= uuF.
4. The P.C.Board units marked width " ■ " show below the main assembled parts.
5. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.
6. Abbreviations for parts ;

-- NAME --	-- DESCRIPTION --
C.CAPACITOR	CERAMIC CAPACITOR
C.CAPACITOR CH	CERAMIC CHIP CAPACITOR
E.CAPACITOR	ELECTROLYTIC CAPACITOR
G.CAPACITOR	GLASS CAPACITOR
M.CAPACITOR	MICA CAPACITOR
P.CAPACITOR	PLASTIC FILM CAPACITOR
S.CAPACITOR	SEMI-CONDUCTOR CAPACITOR
T.CAPACITOR	TANTALUM CAPACITOR
TRIMMER	TRIMMER
C.RESISTOR	CARBON RESISTOR
F.RESISTOR	FUSE RESISTOR
M.RESISTOR	METAL OXSIDE RESISTOR
M.RESISTOR CH	METAL OXSIDE CHIP RESISTOR
S.RESISTOR	SOLID RESISTOR
V.RESISTOR	VARIABLE RESISTOR
W.RESISTOR	WIRE WOUND RESISTOR
COMBI. TR-R	TRANSISTOR-RESISTOR COMBINATION PARTS
COMBI. R-R	RESISTOR-RESISTOR COMBINATION PARTS
COMBI. C-R-L	CAPACITOR-COIL COMBINATION PARTS
C.B.A.	CIRCUIT BOARD ASSEMBLY

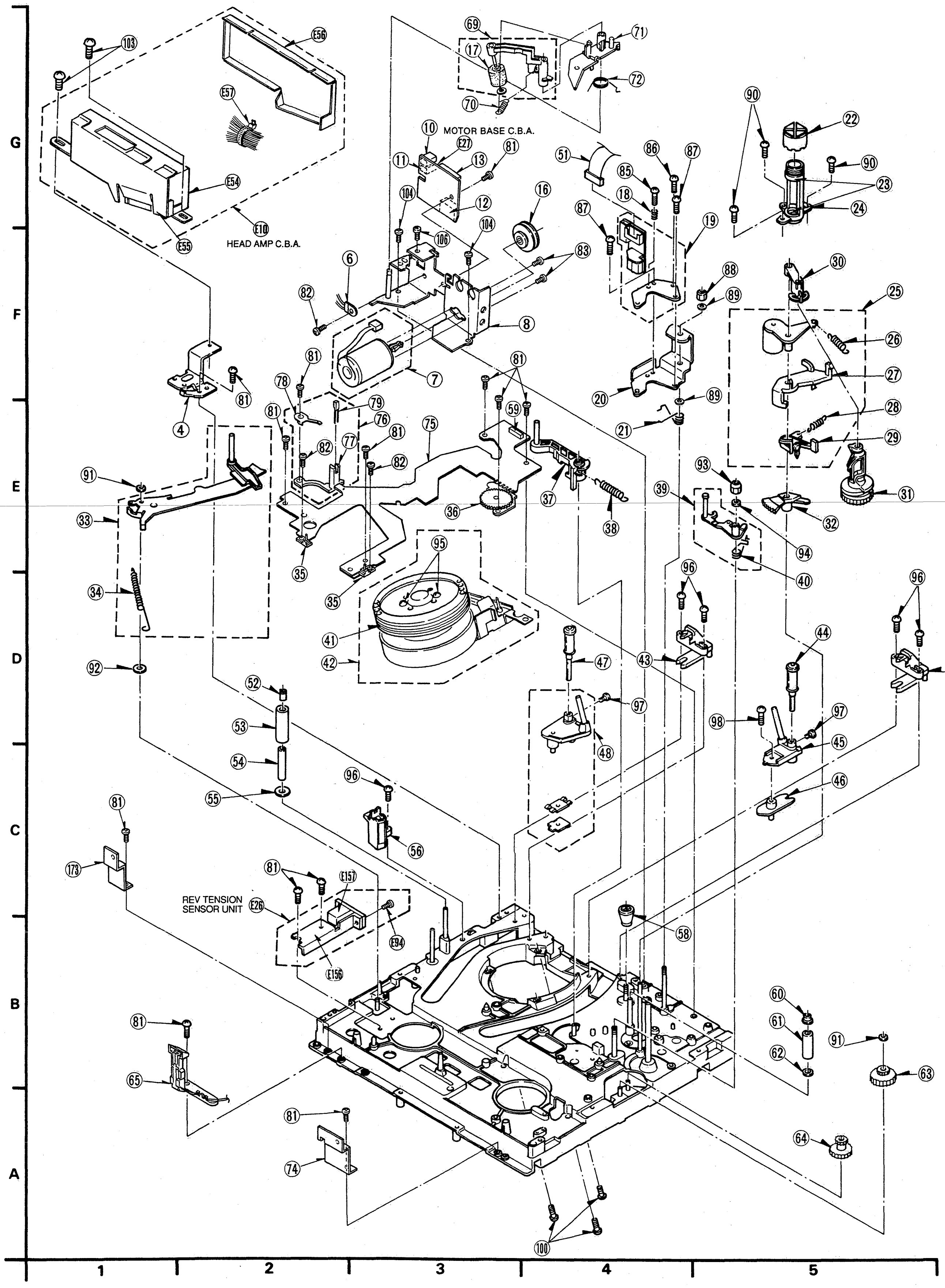
SERVICING FIXTURES & TOOLS LIST

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	VFM8080HQFP	VHS ALIGNMENT TAPE (NTSC)	1	
	VFK0335	RETAINING RING REMOVER	1	
	VFK0329	POST ADJUSTMENT SCREWDRIVE	1	
	VFK0326	HEX WRENCH SET	1	
	VFK0132	BACK TENSION METER	1	
	VFK27	HEAD CLEANING STICK	1	
	MOR265	MORLYTONE GREASE	1	FOR METAL PART
	VFK0191	POST ADJ. PLATE	1	
	VFK0133	DIAL TORQUE GAUGE	1	
	VFK0180	PLASTIC CLAMPER ONLY	1	
	VFK0134	ADAPTOR FOR VFK0133	1	
	VFK0190	REEL TABLE HEIGHT GAUGE	1	
	VFK0236	TENSION POST ADJ. FIXTURE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
	VFK0806	TENSION SENSOR ADJ.	1	
	VFK0328	H-POSITION ADJ.	1	
	VFK0330	FINE ADJ. SCREWDRIVER	1	
	VFK0326	HEX. WRENCH SET	1	
	VFK0343	CHECK LIGHT	1	
	VFK0344	POST HEIGHT ADJ. FIXTURE	1	
	VFK0269	L TYPE SCREWDRIVER	1	
	VFK66	FAN TYPE TENSION GAUSE	1	
	VFK0680	S. C. R. GREASE	1	FOR PLASTIC PART
	VFK0827	EXTENDER BOARD (32P)	1	
	VFK0829	EXTENDER BOARD (64P)	1	
	VFK0828	EXTENDER CABLE (8P)	2	
	VFK0685	EXTENDER BOARD	1	

EXPLODED VIEWS

❶ Chassis Parts Section

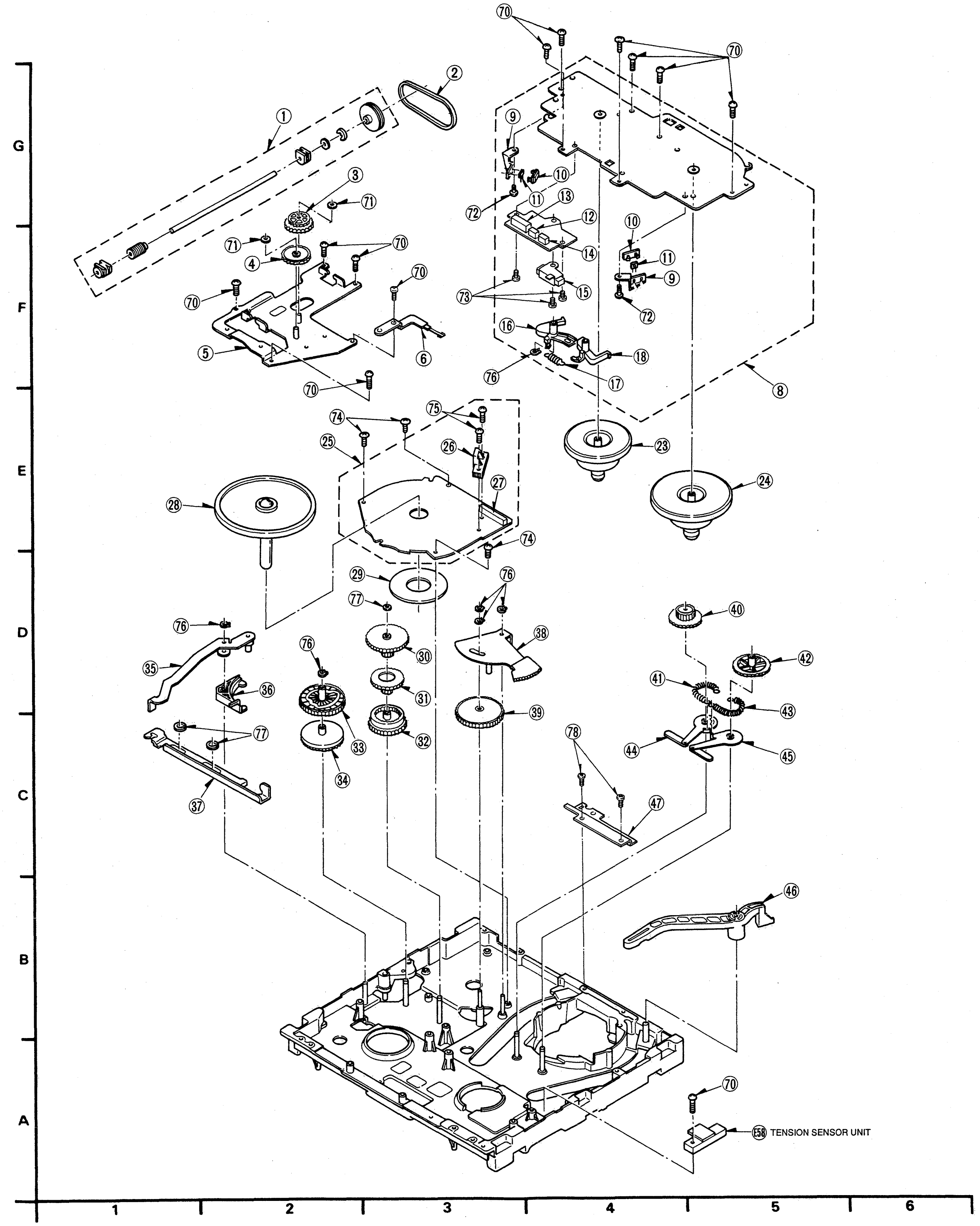


MECHANICAL REPLACEMENT PARTS LIST

1. Chassis Parts Section

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
4	VMA7982	HEAD AMP ANGLE (L)	1	
6	VEK3185	HUMIDITY RESISTOR ASS'Y	1	
7	VEM0432A	LOADING MOTOR ASS'Y	1	(M)
8	VXA4836	MOTOR BASE	1	
10	VJP1229G	CONNECTOR (MALE)	1	
11	VJP1229T	CONNECTOR (MALE)	1	
12	VJP3106B013	CONNECTOR (13P)	1	
13	VJS1493	CONNECTOR (FEMALE)	1	
16	VDP1319	MOTOR PULLEY	1	
18	VMB1251	ADJUST SPRING	1	
19	VED0186	A/C HEAD (1)	1	(M)
20	VXA3649	A/C HEAD BASE	1	
21	VMB1567	AC HEAD SPRING	1	
22	VXQ0375	THRUST SCREW	1	
23	VMX1033	OIL SEAL	2	
24	VXD0101	HOUSING ASS'Y	1	
25	VXL1902	PINCH ROLLER ASS'Y	1	(M)
26	VMB1977	PINCH ROLLER SPRING	1	
27	VXL2088	PINCH PRESSURE ARM	1	
28	VMB1569	PINCH ROLLER ARM SPRING	1	
29	VML1874	PINCH ROLLER LIFT ARM	1	
30	VMX1353	PINCH ROLLER CAM CAP	1	
31	VDG0577	PINCH ROLLER CAM	1	
32	VDG0651	PINCH ROLLER SECTOR GEAR	1	
33	VXL2089	TENSION ARM ASS'Y	1	
34	VMB1975	TENSION SPRING	1	
35	VSP0293	CASSETTE DETECT SW	1	
36	VSS0257	MODE SWITCH	1	(M)
37	VXL1856	SUB LOADING ARM (1) ASS'Y	1	
38	VMB1566	SUB POST SPRING	1	
39	VXL2074	P5 ARM	1	
40	VMB1554	P5 SPRING	1	
41	VEH0878	UPPER CYLINDER UNIT	1	(M)
42	VEG1476	CYLINDER UNIT	1	(M)
43	VMD0910	POST STOPPER	2	
44	VXP1861	ROLLER POST (T) ASS'Y	1	
45	VXA3876	INCLINED BASE (1)	1	
46	VXA2687	INCLINED ADJUSTMENT PLATE	1	
47	VXP1093	ROLLER POST (S) ASS'Y	1	
48	VXA3249KIT	INCLINED BASE(S) (2) ASS'Y	1	
51	VEE8058	AC HEAD CABLE	1	
52	VMX1088	SUPPLY UPPER LIMITER	1	
53	VDP1304	SUPPLY ROLLER	1	
54	VMX1581	P1 COLLAR	1	
55	VMX1533	SUPPLY LOWER LIMITER	1	
56	VBS0038	FE HEAD	1	
58	VHN0110	ADJUST NUT	1	
59	VJS2964A013	CONNECTOR (FEMALE)	1	
60	VMX1544	P4 UPPER LIMITER	1	
61	VMX1568	P4 SLEEVE	1	
62	VMX1534	P4 LOWER LIMITER	1	
63	VDG0664	CONNECTION GEAR	1	
64	VDG0483	PINCH SPEED DOWN GEAR	1	
65	VES0489	LEAF SWITCH	1	
69	VXL2087	HEAD CLEANING (1) ASS'Y	1	(M)
70	VMB2263	CLEANING SPRING (A)	1	
71	VML2510	HEAD CLEANING PLATE (B)	1	
72	VMB2264	CLEANING SPRING (B)	1	
73	VMA6895	MOUNT PLATE (L)	1	
74	VMA6896	MOUNT PLATE (R)	1	
75	VXA4837	BEND FLEXIBLE ASS'Y	1	
76	VXA3520	LED ASS'Y	1	
77	VMD0911	LED HOLDER	1	
78	VMB2020	EARTH SPRING	1	
79	GL450	SENSOR LED	1	
80	VMX1079	CUT WASHER	1	
81	XTV26+6F	SCREW	12	
82	XTV2+4F	SCREW	2	
83	XYN3+C4	SCREW	2	
85	VHD0322	SCREW	1	
86	VHD0089B	SCREW	1	
87	XSN3+6FZ	SCREW	2	
88	VHN0063	NYLON NUT	1	
89	XWE4	WASHER	2	
90	VHD0374	HOUSING SCREW	3	
91	VMX0653	CUT WASHER	1	
92	XWGV3D6G	WASHER	1	
93	VHD0045	NYLON NUT	1	
94	XWE3VW	WASHER	1	
95	VHD0425	SCREW	2	
96	XTV26+10F	SCREW	5	
97	VHD0133	SCREW	2	
98	XYN26+F6FZ	SCREW	1	
100	VHD0342	SCREW	3	
103	XTW3+8LR	SCREW	2	
104	XTV26+8F	SCREW	2	
106	XYE3+EF8R	SCREW	2	

❷ *Moving Parts Section*



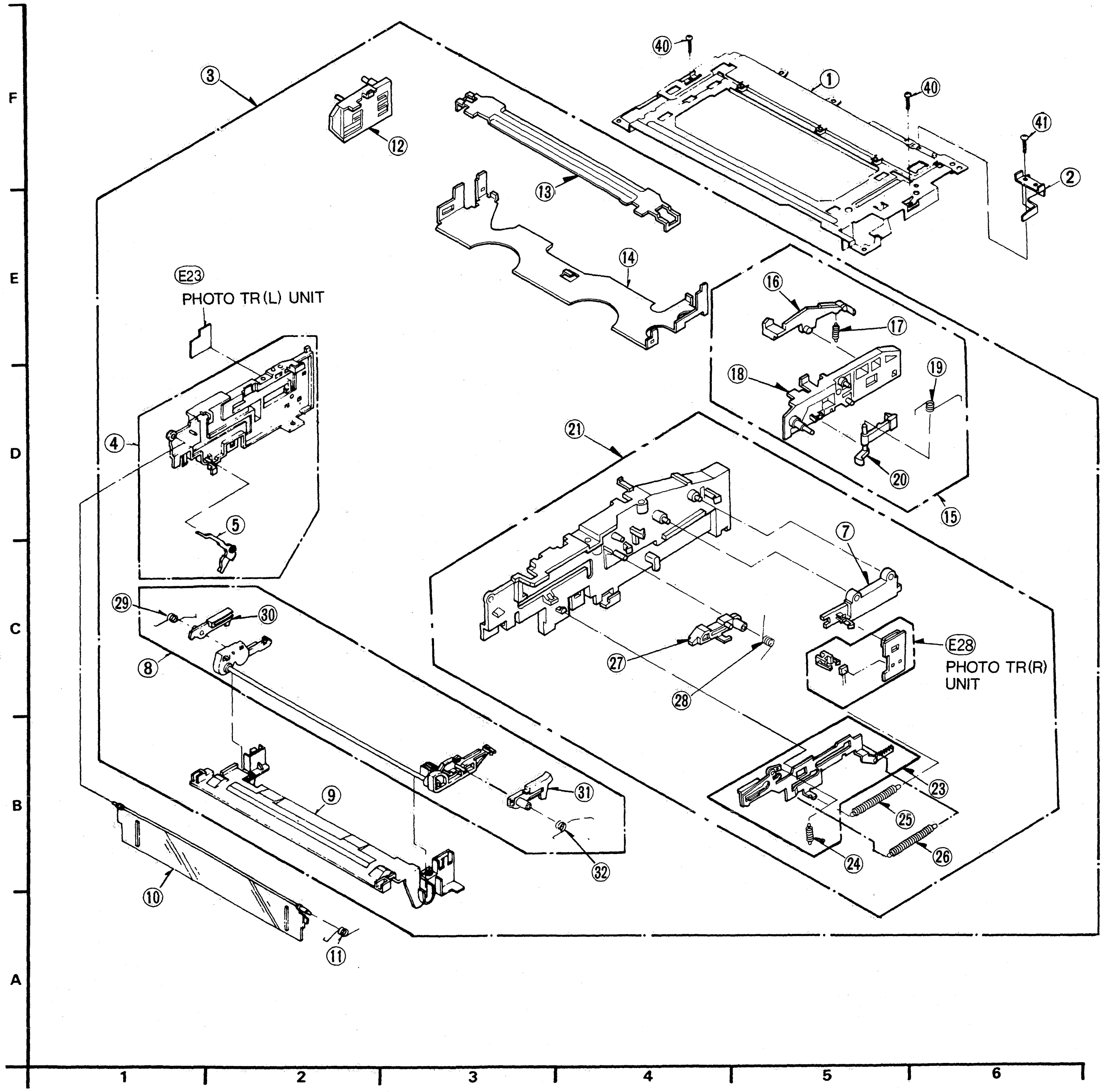
2. Moving Parts Section

Ref.No.	Part No.	Part Name & Descriptior	Pcs	Remarks
1	VXP1082	WORM SHAFT ASS'Y	1	
2	VDV0215	LOADING BELT	1	
3	VDG0581	WORM WHEEL	1	
4	VDG0582	INTERMEDIATE GEAR	1	
5	VXA3646	GEAR BASE (1) ASS'Y	1	
6	VXS0082	EARTH SPRING	1	
8	VXA4839	STATOR BASE ASS'Y	1	
9	VMD0611	FG SUPPORT (1)	2	
10	VMD0621	FG SUPPORT (2)	2	
11	HW300B	HOLE IC	2	
12	VJP1230R	CONNECTOR (MALE)	1	
13	VJP3202A008Z	CONNECTOR (MALE)	1	
14	VJP1230T	CONNECTOR (MALE) 3P	1	
15	VSJ0066	BRAKE SOLENOID	1	
16	VXZ0270	MAIN BRAKE (S) ASS'Y	1	
17	VMB1978	BRAKE SPRING	1	
18	VXZ0314	MAIN BLAKE (T) ASS'Y	1	
23	VXR0187	TAKEUP REEL TABLE ASS'Y	1	
24	VXR0225	SUPPLY REEL TABLE ASS'Y	1	
25	VEK4097	STARTOR UNIT	1	
26	VBK0048	MR HEAD	1	
27	VJS2587	CONNECTOR (FEMALE)	1	
28	VXP1328KIT	ROTOR ASS'Y	1	
29	VMA6847	SUB PLATE	1	
30	VDG0580	CENTRE GEAR	1	
31	VXP0878	RETANER GEAR ASS'Y	1	
32	VDG0342	RING GEAR	1	
33	VDG0578	MAIN CAM GEAR	1	
34	VDG0343	SUB CAM GEAR	1	
35	VXL1895	CAM FOLLOWER ARM ASS'Y	1	
36	VML1861	DETENT ARM	1	
37	VMM0218	MAIN ROD	1	
38	VXA3144	SECTOR GEAR ASS'Y	1	
39	VDG0579	LOADING CAM GEAR	1	
40	VDG0420	LOADING GEAR (T)	1	
41	VMB1555	LOADING SPRING (T)	1	
42	VDG0419	LOADING GEAR (S)	1	
43	VMB1746	LOADING SPRING (S)	1	
44	VXL1489	LOADING ARM (T)(1) ASS'Y	1	
45	VXL1487	LOADING ARM (S)(1) ASS'Y	1	
46	VML2304	CLEANING ROD	1	
47	VMA8003	MOUNT PLATE (B)	1	
70	XTV26+6F	SCREW	12	
71	VMX0653	CUT WASHER	2	
72	XYN2+F5	SCREW	2	
73	XSN26+4FX	SCREW	3	
74	XYEV0004	SCREW	3	
75	XYNV0015	SCREW	2	
76	XUEV3VW	WASHER	6	
77	VMX1079	CUT WASHER	3	
78	XTV3+8F	SCREW	2	

3. Cassette Compartment Section

Ref.No.	Part No.	Part Name & Descriptior	Pcs	Remarks
1	VMA8861	TOP PLATE	1	
2	VMA7224	CASSETTE HOLDER ANGLE	1	
3	VXA4535	CASSETTE COMPERTMENT	1	
4	VXA4467	SIDE PLATE (L)(1)	1	
5	VML1880	OPNER LEVER	1	
7	VSS0258	SLIDE SWITCH	1	
8	VXP0987	MAIN SHAFT ASS'Y	1	
9	VMA8787	CASSETTE GUIDE ASS'Y	1	
10	VKF1263	BLINDER PANEL	1	
11	VMB1258	BLINDER SPRING	1	
12	VMD1387	HOLDER GUIDE	1	
13	VXA3840	HOLDER ANGLE ASS'Y	1	
14	VMA8406	CASSETTE HOLDER	1	
15	VXA3780	HOLDER ANGLE ASS7Y	1	
16	VXA3840	DOOR OPEN LEVER	1	
17	VMB1584	DOOR OPEN LEVER SPRING	1	
18	VXA3840	HOLDER GUIDE (R)	1	
19	VMB2013	RELEASE SPRING	1	
20	VML2306	RELEASE LEVER	1	
22	VXA4076	SIDE PLATE (R)(1)	1	
23	VXA3497	SUB RACK ASS'Y	1	
24	VMB1962	RACK C SPRING	1	
25	VMB1943	CLUTCH SPRING (A)	1	
26	VMB1942	CLUTCH SPRING (B)	1	
27	VML2427	DOWN SUPPORT LEVER	1	
28	VMB1961	DOWN SUPPORT SPRING	1	
29	VMB1836	SUB WIPER SPRING (L)	1	
30	VML1876	SUB WIPER ARM (L)	1	
31	VML1877	SUB WIPER ARM (R)	1	
32	VMB1837	SUB WIPER SPRING (R)	1	
40	XTB26+8G	SCREW	2	
41	XTV26+6F	SCREW	1	

❸ *Cassette Compartment Section*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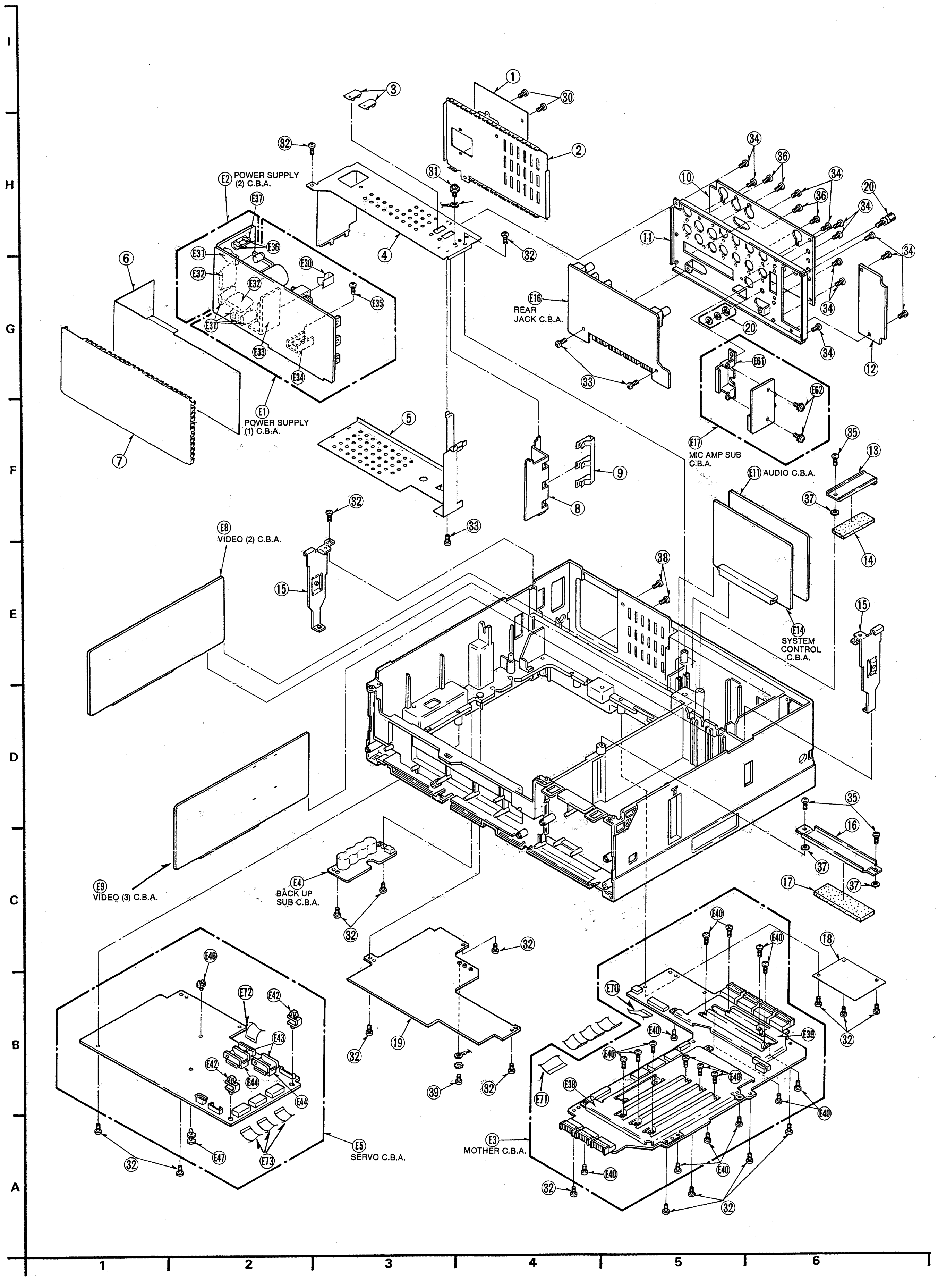
④ *Chassis & Frame Section*



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E1 POWER SUPPLY (1) C.B.A.
E2 POWER SUPPLY (2) C.B.A.
E3 MOTHER C.B.A.
E4 BACK UP SUB C.B.A.
E5 SERVO C.B.A.
E8 VIDEO (2) C.B.A.
E9 VIDEO (3) C.B.A.
E11 AUDIO C.B.A.
E14 SYSTEM CONTROL C.B.A.
E16 REAR JACK C.B.A.
E17 MIC AMP SUB C.B.A.
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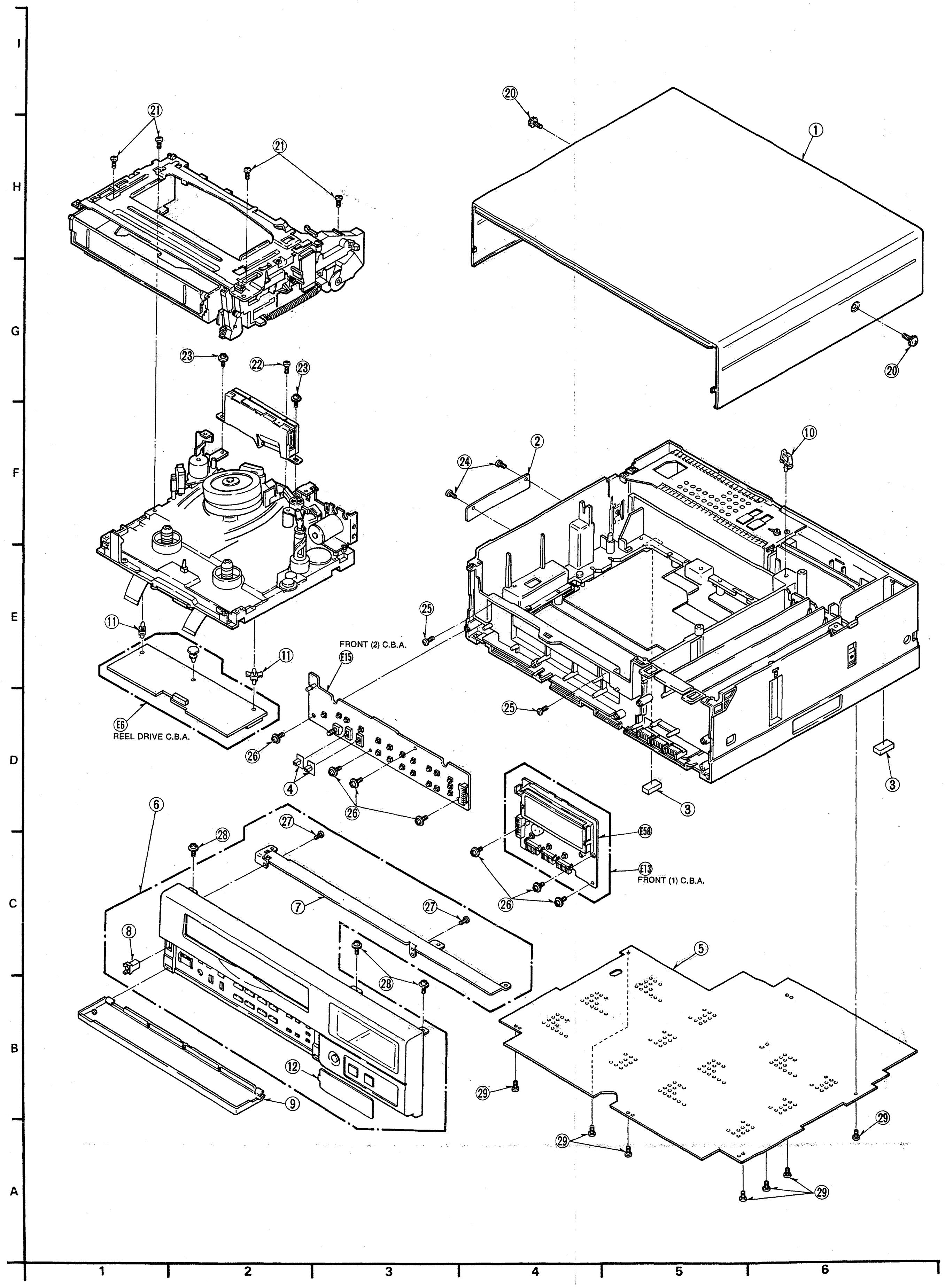
4. Chassis & Frame Section

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VGH3070	INLET PLATE (T)	1	
2	VMP3839	POWER SHIELD CASE (REAR)	1	
3	VMC0357	TRANSISTOR SPRING	2	
4	VSC3735	POWER SHIELD CASE (UPPER)	1	
5	VSC3736	POWER SHIELD CASE (LOWER)	1	
6	VMZ2031	INSULATION SHEET	1	
7	VSC3737	POWER SHIELD CASE (FRONT)	1	
8	VSC3738	HEAT SINK	1	
9	VMC0907	HEAT SINK SPRING	1	
10	VGH3067	REAR JACK PLATE	1	
11	VJH0812	REAR JACK ANGLE	1	
12	VMP3835	ORNAMENTAL PLATE	1	
13	VMP3844	C.B. HOLDER ANGLE (B)	1	
14	VMX2201	CUSHION (B)	1	
15	VMP3841	TOP ANGLE	2	
16	VMP3843	C.B. HOLDER ANGLE (A)	1	
17	VMX2200	CUSHION (A)	1	
18	VMZ2061	INSULATION SHEET	1	
19	VMP3842	SHIELD PLATE	1	
20	XTB4+10FFN	SCREW	1	
30	XTV3+8JFZ	SCREW	2	
31	XYE3+EF8	SCREW	1	
32	XTV3+10GR	SCREW	10	
33	XTV3+8F	SCREW	3	
34	XTV3+8FFZ	SCREW	18	
35	XTV3+8FR	SCREW	3	
36	XTV3+8GFZ	SCREW	2	
37	VMX1558	NYLON WASHER	3	
38	XTV3+10FFZ	SCREW	2	
39	XYE3+EF8R	SCREW	1	

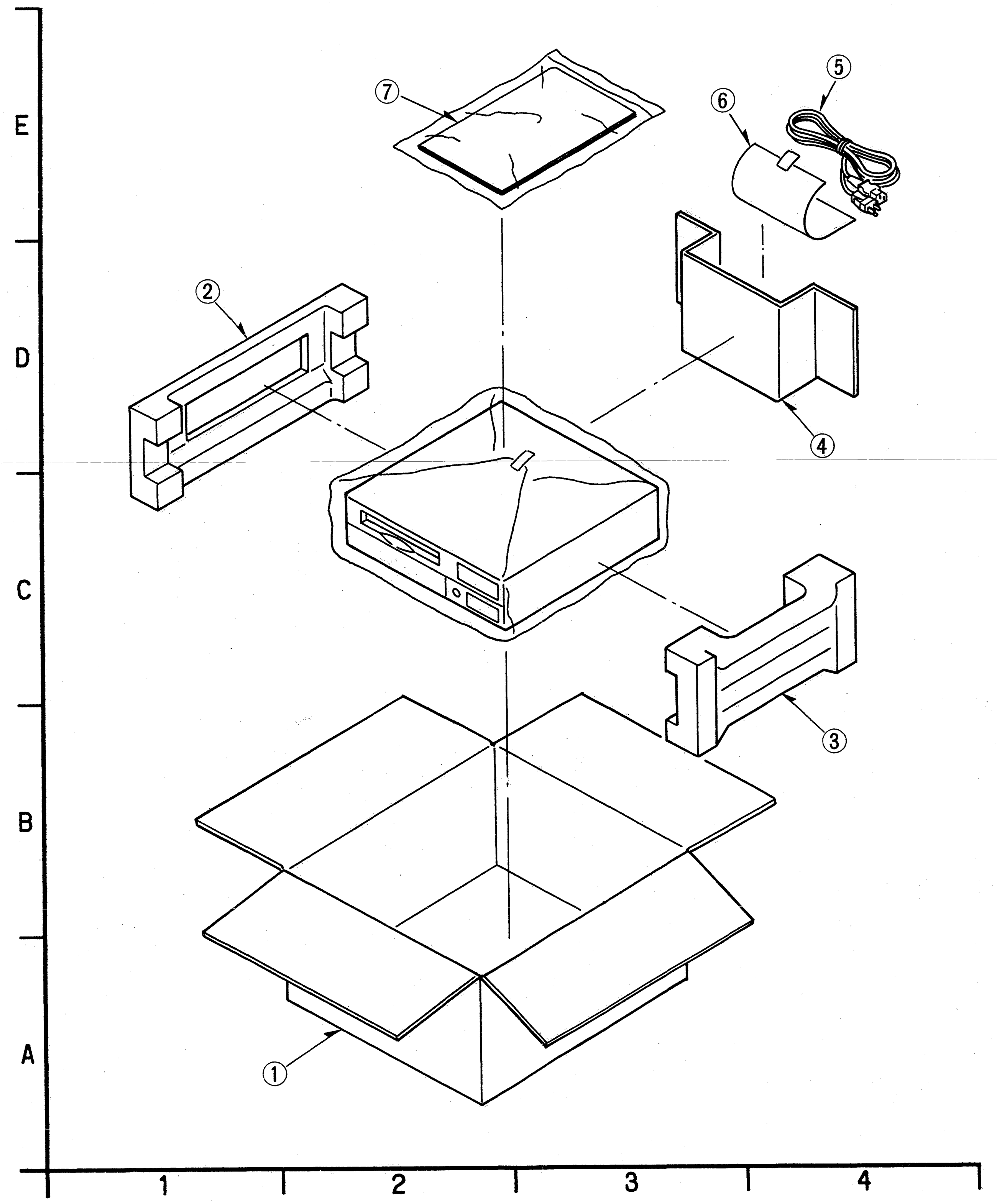
5. Casing Parts Section

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VGM0954	TOP PANEL	1	
2	VGK2421	VOLUME COVER	1	
3	VMX2174	RUBBER FOOT	1	
4	VGU6015	SLIDE KNOB	2	
5	VKU0377	BOTTOM PLATE	1	
6	VYP6963	FRONT PANEL ASS'Y	1	
7	VMP3833	FRONT SUPPORT ANGLE	1	
8	VGQ2925	LATCH	1	
9	VYF2372	FRONT COVER	1	
10	VJF0004	WIRE SADDLE	1	
11	VJF0726	SUPPORT	2	
20	VHD0426	SCREW	2	
21	XTV26+8FR	SCREW	4	
22	XTV4+12J	SCREW	1	
23	XTW3+8LR	SCREW	2	
24	XTV3+6JFZ	SCREW	2	
25	XTV4+8F	SCREW	2	
26	XTV4+10JR	SCREW	7	
27	XTV3+8J	SCREW	2	
28	XTW3+10PR	SCREW	3	
29	XTV3+10G	SCREW	7	

❺ Casing Parts Section



❻ *Packing Parts Section*



6. Packing Parts Section

Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
1	VPG9600	PACKING CASE	1	
2	VPN3481	CUSHION (L)	1	
3	VPN3482	CUSHION (R)	1	
4	VPN3517	PAD	1	
⚠ 5	VJA0488	POWER CODE	1	
6	VPF0136	CORD SHEET	1	
⚠ 7	VQT7631	OPERATING INSTRUCTIONS	1	

ELECTRICAL REPLACEMENT PARTS LIST

VEP01514D / VEP01515B

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	VEP01514D	POWER SUPPLY(1) C.B.A.	1	(RTL)
■ E2	VEP01515B	POWER SUPPLY(2) C.B.A.	1	(RTL)
■ E3	VEP00S47E	MOTHER C.B.A.	1	(RTL)
■ E4	VEP00Y40A	BACK UP SUB C.B.A.	1	(RTL)
■ E5	VEP02553C	SERVO C.B.A.	1	(RTL)
■ E6	VEP02417B	REEL DRIVE C.B.A.	1	(RTL)
■ E8	VEP03E76A	VIDEO 2(C) C.B.A.	1	(RTL)
■ E9	VEP03E77A	VIDEO 3(Y) C.B.A.	1	(RTL)
■ E11	VEP04389D	AUDIO C.B.A.	1	(RTL)
■ E10	VEP05137M	HEAD AMP C.B.A.	1	(RTL)
■ E13	VEP06826M	FRONT(1) C.B.A.	1	(RTL)
■ E14	VEP06827N	SYSTEM CONTROL C.B.A.	1	(RTL)
■ E15	VEP06834B	FRONT(2) C.B.A.	1	(RTL)
■ E16	VEP04385B	REAR JACK C.B.A.	1	(RTL)
■ E17	VEP04387A	MIC AMP C.B.A.	1	(RTL)
■ E23	VEK3578	PHOTO TR. (L)	1	(RTL)
■ E28	VEK4676	PHOTO TR. (R)	1	(RTL)
■ E25	VEK2657	TENSION SENSOR	1	(RTL)
■ E26	VEK4265	REV. TENSNION SENSOR	1	(RTL)
■ E27	VEK6042	MOTOR BASE	1	(RTL)
■	VEP01514D	POWER SUPPLY(1) C.B.A.	1	(RTL)
C1002, 03	VCK0260M102A	C. CAPACITOR 1000P	2	
⚠ C1004	ECQU2A823MN	P. CAPACITOR 100V 0.082U	1	
⚠ C1006	VCK0259K221A	C. CAPACITOR 220P	1	
C1007	ECEA1AGE101	E. CAPACITOR 10V 100U	1	
⚠ C1008	ECQU2A823MN	P. CAPACITOR 100V 0.082U	1	
C1009	ECEA1CGE101	E. CAPACITOR 16V 100U	1	
⚠ C1010	VCK0259K471A	C. CAPACITOR 470P	1	
C1011	ECKF1H103ZF	C. CAPACITOR 50V 0.01U	1	
C1012	ECOS2VA221CA	E. CAPACITOR 350V 220U	1	
C1013	ECQE6473MZ	P. CAPACITOR 630V 0.047U	1	
C1014	ECKD2H151KB	C. CAPACITOR 500V 150P	1	
C1015	ECA1VXLV470	E. CAPACITOR 35V 47U	1	
C1017	ECKF1H102KB	C. CAPACITOR 50V 1000P	1	
C1018	ECA1CXL101	E. CAPACITOR 16V 100U	1	
C1019	ECA1AFZ331	E. CAPACITOR 10V 330U	1	
C1020	ECEA1AGE471	E. CAPACITOR 10V 470U	1	
C1021	ECQB1H473JF	P. CAPACITOR 50V 0.047U	1	
C1022-25	ECKF1H103ZF	C. CAPACITOR 50V 0.01U	4	
C1026	ECEA1HFS101	E. CAPACITOR 50V 100U	1	
C1027	ECA1VFQ681	E. CAPACITOR 35V 680U	1	
C1028	ECEA1VGE471	E. CAPACITOR 35V 470U	1	
C1029	ECEA1CGE102	E. CAPACITOR 16V 1000U	1	
C1030	ECKD2H101KB	C. CAPACITOR 500V 100P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1031	ECA1EFZ471	E. CAPACITOR 25V 470U	1	
C1032	ECEA1EGE471	E. CAPACITOR 25V 470U	1	
C1033	ECKD2H101KB	C. CAPACITOR 500V 100P	1	
C1034	ECA1AFZ122	E. CAPACITOR 10V 1200U	1	
C1035	ECQB1H104JF	P. CAPACITOR 50V 0.1U	1	
D1001-04	RM2B	DIODE	4	
D1005	MA723VT	DIODE	1	
D1006	AK04	DIODE	1	
D1007	VSD0001	DIODE	1	
D1008	RL4Z	DIODE	1	
D1010, 11	FML-G12SP	DIODE	2	
D1012	UPC1093J	IC	1	
D1014	VSD0002	DIODE	1	
D1015	MA178	DIODE	1	
D1016	MA4200-H	DIODE	1	
D1017	FML-G12SP	DIODE	1	
⚠ IC1001	STRS6545	IC	1	
IC1002	SI3120CA	IC	1	
IC1003	SI3050C	IC	1	
IC1005	AN7812	IC	1	
L1002	ELF18D606F	FILTER	1	
L1003	VLP0074	COIL	1	
L1004	VLQ0410	COIL	1	
L1005, 06	VLQ0592	COIL	2	
L1008	VLQEL06F101K	COIL 100UH	1	
L1009	VLP0083	COIL	1	
P1002, 03	VJP3324	CONNECTOR (MALE)	2	
⚠ Q1001	PC817AB	TRANSISTOR	1	
R1003	ERDS2TJ474	C. RESISTOR 1/4W 470K	1	
R1005	ERG3SJ683	M. RESISTOR 3W 68K	1	
R1006	ERDS2FJ221	C. RESISTOR 1/4W 220	1	
R1007	ERDS2FJ561	C. RESISTOR 1/4W 560	1	
R1008	ERDS2FJ471	C. RESISTOR 1/4W 470	1	
R1009	ERW1PK1R0	W. RESISTOR 1W 1	1	
R1010	ERDS2FJ682	C. RESISTOR 1/4W 6.8K	1	
R1011	ERDS2FJ101	C. RESISTOR 1/4W 100	1	
R1012	ERDS2FJ103	C. RESISTOR 1/4W 10K	1	
R1013	ERDS2TJ271	C. RESISTOR 1/4W 270	1	
R1014	ERDS2TJ561	C. RESISTOR 1/4W 560	1	
R1015	EROS2CKG1801	M. RESISTOR 1/4W 1.8K	1	
R1016	ERDS2T0	C. RESISTOR 1/4W 0	1	
R1017	EROS2CKG1301	M. RESISTOR 1/4W 1.3K	1	
R1018	ERDS2T0	C. RESISTOR 1/4W 0	1	
R1020	EROS2CKG22R0	M. RESISTOR 1/4W 22	1	
R1021	EROS2CKG1201	M. RESISTOR 1/4W 1.2K	1	
⚠ R1025	ERD2FCJ4R7P	C. RESISTOR 2W 4.7	1	
⚠ T1001	VLT0691	TRANSFORMER	1	
		MISCELLANEOUS		
E30	VMC0811	SPRING	1	
E31	VMZ0965	CAPACITOR COVER	4	
E32	VMZ1356	CAPACITOR COVER	2	
E33	VSC3487	SHIELD COVER	1	
E34	VSC3434	SHIELD CASE	1	
E35	XTV3+6F	SCREW	1	
■	VEP01515B	POWER SUPPLY(2) C.B.A.	1	(RTL)
⚠ C1001	VCK0259K221A	C. CAPACITOR 220P	1	
F1001	XBA1C20NU100	FUSE	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
P1001	VJS2985	CONNECTOR (FEMALE)	1	
		MISCELLANEOUS		
E31	VMZ0965	CAPACITOR COVER	1	
E36	VJF0318	FUSE HOLDER	2	
E37	VMZ0429	FUSE COVER	1	
■	VEP00S47E	MOTHER C. B. A.	1	(RTL)
P901	VJS1413	CONNECTOR (FEMALE)	1	
P902	VJP1243T	CONNECTOR (MALE) 3P	1	
P911, 12	VJS3324	CONNECTOR (FEMALE)	2	
P921	VJS2214	CONNECTOR (FEMALE)	1	
P922-24	VJS3215B012	CONNECTOR (FEMALE)	3	
P925	VEE8061	SERVO CABLE	1	
P932, 33	VJS2898A064	CONNECTOR (FEMALE)	2	
P942	VJS2898A032	CONNECTOR (FEMALE)	1	
P943-46	VJS3152	CONNECTOR (FEMALE)	4	
P961	VJS2898A064	CONNECTOR (FEMALE)	1	
P962-64	VJS3152	CONNECTOR (FEMALE)	3	
P965	VEE8057	TC CABLE	1	
P966	VEE8060	RS-232C CABLE	1	
		MISCELLANEOUS		
E38	VMP3845	ANGLE	1	
E39	VMP3846	ANGLE B	1	
E41	XNG26BFZ	NUT	2	
E70	VWJ0670	FLEXIBLE CABLE	1	
E71	VWJ18AW105MM	FLEXIBLE CABLE	1	
	XTV26+8F	SCREW	2	
	XTV26+8J	SCREW	13	
■	VEP00Y40A	BACK UP SUB C. B. A.	1	(RTL)
BAT2992	VL3032/1GUF	BATTERY	1	
P2992	VJP1230T	CONNECTOR (MALE) 3P	1	
■	VEP02553C	SERVO C. B. A.	1	(RTL)
C2001	ECEA1CKN220	E. CAPACITOR 16V 22U	1	
C2002	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2003	ECUM1H223KBN	C. CAPACITOR CH 50V 0. 022U	1	
C2004	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C2005	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C2006	ECEA1AKA330	E. CAPACITOR 10V 33U	1	
C2007	ECUM1H104ZFN	C. CAPACITOR CH 50V 0. 1U	1	
C2008	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2009	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2010	ECUM1H150JCN	C. CAPACITOR CH 50V 15P	1	
C2011	ECUM1H181JCN	C. CAPACITOR CH 50V 180P	1	
C2012	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C2013	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2014	ECUM1H104ZFN	C. CAPACITOR CH 50V 0. 1U	1	
C2015	ECHU1C332JB	P. CAPACITOR 16V 3300P	1	
C2016	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C2017	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2019	ECHU1C472JB	P. CAPACITOR 16V 4700P	1	
C2021	ECEA1CKA330	E. CAPACITOR 16V 33U	1	
C2022	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C2023	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2024	ECUM1H471JCN	C. CAPACITOR CH 50V 470P	1	
C2025	ECEA0JKA221	E. CAPACITOR 6. 3V 220U	1	
C2026	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2027	ECEA1HKA3R3	E. CAPACITOR 50V 3. 3U	1	
C2028	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C2029, 30	ECEA1CKN220	E. CAPACITOR 16V 22U	2	
C2031	ECUM1H223ZFN	C. CAPACITOR CH 50V 0. 022U	1	
C2032	ECUM1H392KBN	C. CAPACITOR CH 50V 3900P	1	
C2033	ECUM1H104ZFN	C. CAPACITOR CH 50V 0. 1U	1	
C2034	ECHU1C683JB5	P. CAPACITOR 16V 0. 068U	1	
C2035	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2036	ECUM1H104ZFN	C. CAPACITOR CH 50V 0. 1U	1	
C2037	ECEA1HKA4R7	E. CAPACITOR 50V 4. 7U	1	
C2038	ECUM1H222KBN	C. CAPACITOR CH 50V 2200P	1	
C2039	ECEA0JKA221	E. CAPACITOR 6. 3V 220U	1	
C2041-45	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	5	
C2046	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C2047	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	1	
C2048	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C2049, 50	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	2	
C2051, 52	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	2	
C2053	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2054	ECEA1CKN100	E. CAPACITOR 16V 10U	1	
C2055	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C2056	ECEA0JKA221	E. CAPACITOR 6. 3V 220U	1	
C2301	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2302	ECEA1HKN4R7	E. CAPACITOR 50V 4. 7U	1	
C2303-06	ECUX1E104KBN	C. CAPACITOR CH 25V 0. 1U	4	
C2307	ECUM1E683KBN	C. CAPACITOR CH 25V 0. 068U	1	
C2308, 09	ECEA1HKN4R7	E. CAPACITOR 50V 4. 7U	2	
C2310	ECUM1H473KBN	C. CAPACITOR CH 50V 0. 047U	1	
C2311	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2312	ECUM1C474KBM	C. CAPACITOR CH 16V 0. 47U	1	
C2313	ECEA1EKA470	E. CAPACITOR 25V 47U	1	
C2314	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2315	ECUX1C224KBN	C. CAPACITOR CH 16V 220K	1	
C2317-19	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	3	
C2320-23	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	4	
C2324	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2325	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2326, 27	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	2	
C2328	ECEA1AKA220	E. CAPACITOR 10V 22U	1	
C2329, 30	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	2	
C2331	ECEA1HKN2R2	E. CAPACITOR 50V 2. 2U	1	
C2332	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C2333	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	1	
C2334	ECEA1HKN2R2	E. CAPACITOR 50V 2. 2U	1	
C2335	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C2336	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	1	
C2337, 38	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C2339	ECUX1E104KBN	C. CAPACITOR CH 25V 0. 1U	1	
C2341	ECUM1H103KBN	C. CAPACITOR CH 50V 0. 01U	1	
C2342, 43	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	2	
C2901	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2902	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C2903	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	1	
C2904	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C2905	ECUM1H561JCN	C. CAPACITOR CH 50V 560P	1	
C2906	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C2907	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2908	ECUM1H222KBN	C. CAPACITOR CH 50V 2200P	1	
C2909	ECEA1EU101	E. CAPACITOR 25V 100U	1	
C2910	ECEA1HKA4R7	E. CAPACITOR 50V 4. 7U	1	
C2911	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C2912	ECEA1EU101	E. CAPACITOR 25V 100U	1	
C2913	ECEA1HKA4R7	E. CAPACITOR 50V 4. 7U	1	
C2914	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C2915-17	ECEA1EU101	E. CAPACITOR 25V 100U	3	
C2918	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2919	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C2920	ECUX1E104KBN	C. CAPACITOR CH 25V 0. 1U	1	
C2921	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	1	

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Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
C2922	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2923	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C2925	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2926	ECEA1AKA330	E. CAPACITOR 10V 33U	1	
C2927-29	ECEA1EU101	E. CAPACITOR 25V 100U	3	
D2001, 02	MA152WK	DIODE	2	
D2005	MA701A	DIODE	1	
D2006	MA152WK	DIODE	1	
D2007	MA723VT	DIODE	1	
D2008	11EQS04	DIODE	1	
D2009	MA704	DIODE	1	
D2301	MA152K	DIODE	1	
D2302	MA152WK	DIODE	1	
D2304, 05	MA153	DIODE	2	
D2306	MA4062	DIODE	1	
D2901	MA3120-M	DIODE	1	
D2902	11DQ04	DIODE	1	
D2903	MA3160-L	DIODE	1	
D2904	11DQ04	DIODE	1	
D2905	MA3160-L	DIODE	1	
D2906	11DQ04	DIODE	1	
D2907	MA701A	DIODE	1	
D2908	8P2M	DIODE	1	
D2909	MA3020	DIODE	1	
D2910, 11	MA152K	DIODE	2	
D2912	MA4140-M	DIODE	1	
D2913	MA3140-M	DIODE	1	
D2914-16	MA3160-H	DIODE	3	
D2917-19	MA152K	DIODE	3	
D2920	MA3062M	DIODE	1	
D2921	MA3082M	DIODE	1	
FL2001	VLF0634	FILTER	1	
FL2002-04	VLF0630	FILTER	3	
IC2001	MN6743AA	IC	1	
IC2002	TC4W53F	IC	1	
IC2003	MN1280R	IC	1	
IC2004	AN3727S	IC	1	
IC2006	TC4S30F	IC	1	
IC2007	MC14011BF	IC	1	
IC2010	UPC358G2	IC	1	
IC2011	MC14070BF	IC	1	
IC2012	MC14011BF	IC	1	
IC2014	LM393PS	IC	1	
IC2015	TC4S66F	IC	1	
IC2301	AN3815K	IC	1	
IC2302	BA6870S	IC	1	
IC2303	LM358PS	IC	1	
IC2304	LM393PS	IC	1	
IC2305, 06	UPC4556G2	IC	2	
IC2307	NJM78L12UA	IC	1	
IC2901	BA6149LS	IC	1	
IC2902	LM393PS	IC	1	
J2	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
L2001-06	VLQ0460	COIL	6	
L2007, 08	VLQEL05K221J	COIL 220UH	2	
L2010, 11	VLQEL05K221J	COIL 220UH	2	
L2301, 02	VLQ0460	COIL	2	
L2304	VLQ0460	COIL	1	
L2901	VLQ0460	COIL	1	
L2902	VLQ0128	COIL	1	
L2903	VLQ0129	COIL 300UH	1	
L2904, 05	ELC10E014	COIL	2	
P2001-03	VJS3215B012	CONNECTOR (FEMALE)	3	
P2004	VJP1230T	CONNECTOR (MALE) 3P	1	
P2005	VJP1235T	CONNECTOR (MALE) 8P	1	
P2006	VJS2149W	CONNECTOR (FEMALE)	1	
P2301	VJP3078	CONNECTOR (MALE)	1	
P2302	VJS1477	CONNECTOR (FEMALE)	1	

Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
Q2001	2SC2295	TRANSISTOR	1	
Q2004	MSD601-R	TRANSISTOR	1	
Q2301	MSB709-R	TRANSISTOR	1	
Q2901	MSB709-R	TRANSISTOR	1	
Q2902, 03	MSD601-R	TRANSISTOR	2	
Q2904	2SB1151	TRANSISTOR	1	
Q2905, 06	MSB709-R	TRANSISTOR	2	
Q2907	2SB772	TRANSISTOR	1	
Q2908, 09	MSB709-R	TRANSISTOR	2	
Q2910	2SB772	TRANSISTOR	1	
Q2911	MSD601-R	TRANSISTOR	1	
Q2912	2SD1275	TRANSISTOR	1	
Q2913	MSD601-R	TRANSISTOR	1	
QR2001, 02	MUN2213	TRANSISTOR-RESISTOR	2	
QR2003	MUN2211	TRANSISTOR-RESISTOR	1	
QR2004	UN2216-R	TRANSISTOR	1	
QR2005	MUN2213	TRANSISTOR-RESISTOR	1	
QR2901, 02	MUN2213	TRANSISTOR-RESISTOR	2	
QR2903	MUN2113	TRANSISTOR-RESISTOR	1	
QR2904	MUN2111	TRANSISTOR-RESISTOR	1	
QR2905	MUN2213	TRANSISTOR-RESISTOR	1	
R2001	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2002	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2003	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	1	
R2004	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R2005	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2006	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R2007, 08	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R2009	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2010, 11	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2012	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R2013	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R2014	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2015, 16	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	2	
R2017	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R2018, 19	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2020	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R2023	ERJ6GEYG622	M. RESISTOR CH 1/10W 6.2K	1	
R2024	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R2025	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2026	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2027	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R2028, 29	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2036-39	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	4	
R2040	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R2041	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2042	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2043-46	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	4	
R2047	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R2048-50	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	3	
R2051	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2053, 54	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2055	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R2056	ERJ6GEYG224	M. RESISTOR CH 1/10W 220K	1	
R2057	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2058, 59	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2060	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2061	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R2062	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R2063	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R2064	EROS2CKG43R0	M. RESISTOR 1/4W 43	1	
R2065	EROS2CKG1600	M. RESISTOR 1/4W 16	1	
R2066	EROS2CKG39R0	M. RESISTOR 1/4W 39	1	
R2301	ERDS2TJ150	C. RESISTOR 1/4W 15	1	
R2302	ERX12SJR68	M. RESISTOR 1/2W 0.68	1	
R2303, 04	ERDS2TJ150	C. RESISTOR 1/4W 15	2	
R2305	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2306	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R2307, 08	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	2	
R2309	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
R2310	ERJ6GEYG242	M. RESISTOR CH 1/10W 2.4K	1	
R2311	ERJ6GEYJ684	M. RESISTOR CH 1/10W 680K	1	
R2312	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	

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Ref. No.	Part No.	Part Name & Descriptio	Pcs	Remarks
R2313	ERDS2TJ330	C. RESISTOR 1/4W 33	1	
R2314	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2315	ERDS2TJ330	C. RESISTOR 1/4W 33	1	
R2316	ERX12SJR47	M. RESISTOR 1/2W 0. 47	1	
R2317	ERDS2TJ330	C. RESISTOR 1/4W 33	1	
R2318	ERJ6GEYG151	M. RESISTOR CH 1/10W 150	1	
R2319-21	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R2322	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2323	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2324	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2325-28	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R2329, 30	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R2331	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	1	
R2332	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R2333	ERJ6GEYG332	M. RESISTOR CH 1/10W 3. 3K	1	
R2334	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	1	
R2335	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R2336	ERJ6GEYG332	M. RESISTOR CH 1/10W 3. 3K	1	
R2337	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2338	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2339	ERJ6GEYG181	M. RESISTOR CH 1/10W 180	1	
R2901	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	1	
R2902	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2903	ERJ6GEYG154	M. RESISTOR CH 1/10W 150K	1	
R2904	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	1	
R2905, 06	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R2907	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R2908	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2909-12	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R2913	ERDS2TJ270	C. RESISTOR 1/4W 27	1	
R2914	ERG2SJ561	M. RESISTOR 2W 560	1	
R2915	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2916	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R2917-19	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R2920	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2921	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R2922	ERDS2TJ391	C. RESISTOR 1/4W 390	1	
R2923	ERDS2TJ182	C. RESISTOR 1/4W 1. 8K	1	
R2924	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2925	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R2926-28	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R2929	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2930	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R2931	ERDS2TJ391	C. RESISTOR 1/4W 390	1	
R2932	ERDS2TJ182	C. RESISTOR 1/4W 1. 8K	1	
R2933	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2934, 35	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R2936	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R2937-39	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R2940	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2941	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R2942-44	ERJ6GEYG271	M. RESISTOR CH 1/10W 270	3	
R2945, 46	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R2947	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R2948-51	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R2952	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
TP2001, 02	VJR0098	TEST POINT	2	
VR2001	EVN49CA00B23	V. RESISTOR 2K	1	
VR2002	EVN49CA00B15	V. RESISTOR 100K	1	
VR2003, 04	EVN49CA00B25	V. RESISTOR 200K	2	
VR2005-08	EVN49CA00B15	V. RESISTOR 100K	4	
X2002	VSX0296	CRYSTAL OSCILLATOR	1	
X2901	VSX0136	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
E42	VKC0271	HINGE	2	
E44	VMC0075	HEAT SINK	1	
E45	VMC0493	HEAT SINK SPRING	1	
E46	VJF0816	CARD CLAMPER	2	
E47	VMX0985	SPACER	1	
E72	VWJ04CN100CA	FLEXIBLE CABLE	1	

Ref. No.	Part No.	Part Name & Descriptio	Pcs	Remarks
E73	VWJ12AW080MM	FLEXIBLE CABLE	3	
	VSC1215	HEAT SINK	1	
	VSC3405	HEAT SINK	1	
■	VEP02417B	REEL DRIVE C. B. A.	1	(RTL)
C2701	ECQV1H104JL	P. CAPACITOR 50V 0. 1U	1	
C2702	ECEA1EKA470	E. CAPACITOR 25V 47U	1	
C2703	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2704	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	1	
C2705	ECQV1H564JL	P. CAPACITOR 50V 0. 56U	1	
C2706-08	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	3	
C2709-12	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	4	
C2713	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2714	ECEA0JKA101	E. CAPACITOR 6. 3V 100U	1	
C2715-17	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	3	
C2718	ECQV1H104JL	P. CAPACITOR 50V 0. 1U	1	
C2719	ECEA1EKA470	E. CAPACITOR 25V 47U	1	
C2720	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C2721	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	1	
C2722	ECQV1H564JL	P. CAPACITOR 50V 0. 56U	1	
C2723-25	ECEA1HKA2R2	E. CAPACITOR 50V 2. 2U	3	
C2726-29	ECUM1H333KBN	C. CAPACITOR CH 50V 0. 033U	4	
D2701	MA151K	DIODE	1	
D2702	MA151WK	DIODE	1	
D2703	MA151K	DIODE	1	
D2704	MA153	DIODE	1	
D2705	MA151K	DIODE	1	
D2706	MA151WK	DIODE	1	
D2707	MA151K	DIODE	1	
D2708	MA153	DIODE	1	
IC2701, 02	BA6435S	IC	2	
IC2703	LM358PS	IC	1	
IC2704	MC14053BF	IC	1	
IC2705	LM339NS	IC	1	
IC2706	LM358PS	IC	1	
J2701	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
L2701-04	VLQ0460	COIL	4	
P2701	VJS3135	CONNECTOR (FEMALE)	1	
P2702	VJS2149W	CONNECTOR (FEMALE)	1	
P2703	VJS3202B008	CONNECTOR (FEMALE)	1	
P2704, 05	VJS1412	CONNECTOR (FEMALE)	2	
Q2701	MSD601-R	TRANSISTOR	1	
QR2701	MUN2213	TRANSISTOR-RESISTOR	1	
R2701	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2702	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R2703	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2704	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2705	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R2706	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2707, 08	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R2709	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R2710	ERJ6GEYG182	M. RESISTOR CH 1/10W 1. 8K	1	
R2711	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2712	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2713, 14	ERDS2TJ330	C. RESISTOR 1/4W 33	2	
R2715	ERX12SJ1R0	M. RESISTOR 1/2W 1	1	
R2716	ERDS2TJ330	C. RESISTOR 1/4W 33	1	
R2717	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R2718	ERJ6GEYG272	M. RESISTOR CH 1/10W 2. 7K	1	
R2719	ERJ6GEYF822	M. RESISTOR CH 1/10W 8. 2K	1	
R2720	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2721	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2722, 23	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	2	
R2724	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2725, 26	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R2727	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R2728	ERJ6GEYG823	M. RESISTOR CH 1/10W 82K	1	
R2729	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2730	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R2731	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
R2732	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2733	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2734, 35	ERDS2TJ330	C. RESISTOR 1/4W 33	2	
R2736	ERX12SJR47	M. RESISTOR 1/2W 0. 47	1	
R2737	ERDS2TJ330	C. RESISTOR 1/4W 33	1	
R2738	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2739	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R2740	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R2741, 42	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R2743	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
		MISCELLANEOUS		
	VMX2183	SPACER	1	
■	VEP03E76A	VIDEO 2(C) C. B. A.	1	(RTL)
C8002, 03	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
C8004	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	1	
C8005	ECUX1H101JCV	C. CAPACITOR CH 50V 100P	1	
C8006	ECEA0JU101	E. CAPACITOR 6. 3V 100U	1	
C8007-12	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	6	
C8013, 14	ECEA1CU470	E. CAPACITOR 16V 47U	2	
C8015	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8016	ECEA1HU3R3	E. CAPACITOR 50V 3. 3U	1	
C8017	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	1	
C8018	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8019	ECUX1H472KBV	C. CAPACITOR CH 50V 4700P	1	
C8020	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C8021, 22	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	2	
C8023	ECEA1CU101	E. CAPACITOR 16V 100U	1	
C8024	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C8025	ECEA1CU101	E. CAPACITOR 16V 100U	1	
C8026, 27	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	2	
C8028	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C8029, 30	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	2	
C8031	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	1	
C8035	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	1	
C8037	ECUX1H100DCV	C. CAPACITOR CH 50V 10P	1	
C8038	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	1	
C8039	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	1	
C8041	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8042	ECUX1H390JCV	C. CAPACITOR CH 50V 39P	1	
C8043	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C8044	ECEA1HN010S	E. CAPACITOR 50V 1U	1	
C8045	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	1	
C8046	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8047	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C8048	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C8049	ECEA1CU220	E. CAPACITOR 16V 22U	1	
C8050	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C8051	ECUX1H102JCV	C. CAPACITOR CH 50V 1000P	1	
C8052	ECQV1H224JL	P. CAPACITOR 50V 0. 22U	1	
C8053	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8055	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C8056	ECUX1H080DCV	C. CAPACITOR CH 50V 8P	1	
C8057	ECEA1AU221	E. CAPACITOR 10V 220U	1	
C8058	ECEA1AU101	E. CAPACITOR 10V 100U	1	
C8059	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	1	
C8062	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C8063	ECEA1HU4R7	E. CAPACITOR 50V 4. 7U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C8064	ECEA1HU2R2	E. CAPACITOR 50V 2. 2U	1	
C8065	ECUX1H181JCV	C. CAPACITOR CH 50V 180P	1	
C8066	ECQV1H393JL	P. CAPACITOR 50V 0. 039U	1	
C8068	ECUX1H181JCV	C. CAPACITOR CH 50V 180P	1	
C8069	ECUX1H330JCV	C. CAPACITOR CH 50V 33P	1	
C8070	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C8071	ECUX1H221JCV	C. CAPACITOR CH 50V 220P	1	
C8072	ECEA1CU330	E. CAPACITOR 16V 33U	1	
C8073	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C8074	ECQV1H104JL	P. CAPACITOR 50V 0. 1U	1	
C8076	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C8078, 79	ECQV1H184JL	P. CAPACITOR 50V 0. 18U	2	
C8080	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C8081	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C8082, 83	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
C8084	ECUX1H101JCV	C. CAPACITOR CH 50V 100P	1	
C8085	ECEA1HU2R2	E. CAPACITOR 50V 2. 2U	1	
C8086	ECUX1E223KBV	C. CAPACITOR CH 25V 0. 023U	1	
C8087, 88	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
D8001, 02	MA151K	DIODE	2	
D8003	MA153	DIODE	1	
D8005, 06	MA151K	DIODE	2	
FL8001	VLF1459	FILTER	1	
FL8003	VLF0330	FILTER	1	
FL8004	ELB4K052	FILTER	1	
IC8001	VEFH04E	IC	1	
IC8002	TL8848AF	IC	1	
IC8003	MC14053BF	IC	1	
IC8004	AN3495S	IC	1	
IC8005	TC7S08F	IC	1	
L8001	VLQEL05S820J	COIL 82UH	1	
L8002	VLQEL05S181J	COIL 180UH	1	
L8003-07	VLQEL05S101J	COIL 100UH	5	
L8010, 11	VLQEL05S390J	COIL 39UH	2	
L8012, 13	VLQEL05S101J	COIL 100UH	2	
L8014	VLQEL05S470J	COIL 47UH	1	
L8015, 16	VLQEL05S101J	COIL 100UH	2	
L8018	VLQEL05S221J	COIL 220UH	1	
L8019	VLQEL05S331J	COIL 330UH	1	
L8020	VLQEL05S470J	COIL 47UH	1	
L8022	VLQEL05S681J	COIL 680UH	1	
L8023, 24	VLQEL05S101J	COIL 100UH	2	
P8001	VJP3176B064	CONNECTOR (MALE)	1	
P8002	VJP3082	CONNECTOR (MALE)	1	
Q8001	2SB644	TRANSISTOR	1	
Q8002	2SB643	TRANSISTOR	1	
Q8003-06	MSD601-R	TRANSISTOR	4	
Q8007-09	2SC2295-C	TRANSISTOR	3	
Q8010	MSB709-R	TRANSISTOR	1	
Q8011	2SC2295-C	TRANSISTOR	1	
Q8013, 14	MSB709-R	TRANSISTOR	2	
Q8015, 16	MSD601-R	TRANSISTOR	2	
Q8017	MSB709-R	TRANSISTOR	1	
QR8001, 02	MUN2211	TRANSISTOR-RESISTOR	2	
QR8004	MUN2111	TRANSISTOR-RESISTOR	1	
QR8005	MUN2211	TRANSISTOR-RESISTOR	1	
QR8007	MUN2211	TRANSISTOR-RESISTOR	1	
QR8008	MUN2213	TRANSISTOR-RESISTOR	1	
QR8009	MUN2113	TRANSISTOR-RESISTOR	1	
QR8010, 11	MUN2211	TRANSISTOR-RESISTOR	2	
QR8013, 14	XN1213	TRANSISTOR-RESISTOR	2	
R8001, 02	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R8003	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8004	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8005	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R8006-09	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	4	
R8010	ERJ3GEYJ272	M. RESISTOR CH 1/16W 2. 7K	1	

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Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R8011, 12	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R8013	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8014	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8015	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R8017	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R8018, 19	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R8020	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R8021	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R8022	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R8023-25	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	3	
R8026	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8027, 28	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R8029	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8030	ERJ3GEYJ330	M. RESISTOR CH 1/16W 33	1	
R8031	ERJ3GEYJ470	M. RESISTOR CH 1/16W 47	1	
R8032	ERJ3GEYG332	M. RESISTOR CH 1/16W 3. 3K	1	
R8033	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R8034	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	1	
R8035	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R8036, 37	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R8038	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8040	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R8042, 43	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	2	
R8044	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R8045	ERJ3GEYG332	M. RESISTOR CH 1/16W 3. 3K	1	
R8046	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8047-49	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	3	
R8050	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R8051	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R8052	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8053	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R8054	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R8055, 56	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	2	
R8057	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8058	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8059	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8060	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8062	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R8063	ERJ3GEYJ330	M. RESISTOR CH 1/16W 33	1	
R8064	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1. 8K	1	
R8065	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R8066	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R8067	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R8068	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R8069	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R8070	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8071	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R8072	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R8073	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R8074	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8077	ERJ3GEYG622	M. RESISTOR CH 1/16W 6. 2K	1	
R8078	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8079	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R8080	ERJ3GEYG362	M. RESISTOR CH 1/16W 3. 6K	1	
R8081	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R8082	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8083	ERJ3GEYJ272	M. RESISTOR CH 1/16W 2. 7K	1	
R8084, 85	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R8086	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8088	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R8090	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8092	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R8095	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8096	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R8097	ERJ3GEYG682	M. RESISTOR CH 1/16W 6. 8K	1	
R8098	ERJ3GEYJ221	M. RESISTOR CH 1/16W 220	1	
R8099	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R8100	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R8101	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8102	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R8103	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R8104	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R8105	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R8106	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R8107	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R8111	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R8112	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R8113	ERJ3GEYJ330	M. RESISTOR CH 1/16W 33	1	
R8114	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
TG8001	VJR0098	TEST POINT	1	
TP8001-05	VJR0098	TEST POINT	5	
VR8001	EVN49CA00B13	V. RESISTOR 1K	1	
VR8003	EVN49CA00B24	V. RESISTOR 20K	1	
X8001	VSX0160	CRYSTAL OSCILLATOR	1	
■	VEP03E77A	VIDEO 3(Y) C. B. A.	1	(RTL)
C3001	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C3002	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3003	ECHS1H392JZ	P. CAPACITOR 50V 3900P	1	
C3004, 05	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
C3006	ECEA0JU101	E. CAPACITOR 6. 3V 100U	1	
C3007	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3008	ECEA1CU220	E. CAPACITOR 16V 22U	1	
C3009	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3010	ECEA1VU100	E. CAPACITOR 35V 10U	1	
C3011	ECUX1H332KBV	C. CAPACITOR CH 50V 3300P	1	
C3012	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3013	ECEA1HKGR68	E. CAPACITOR 50V 0. 68U	1	
C3014	ECQB1H473JF	P. CAPACITOR 50V 0. 047U	1	
C3015	ECEA1VU220	E. CAPACITOR 35V 22U	1	
C3016	ECEA1CU330	E. CAPACITOR 16V 33U	1	
C3017	ECQB1H152JF	P. CAPACITOR 50V 1500P	1	
C3018	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3019	ECEA1HU4R7	E. CAPACITOR 50V 4. 7U	1	
C3020	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C3021	ECEA1HU4R7	E. CAPACITOR 50V 4. 7U	1	
C3022	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3023	ECUX1H821JCV	C. CAPACITOR CH 50V 820P	1	
C3024	ECUX1E104ZFV	C. CAPACITOR CH 25V 0. 1U	1	
C3025	ECQV1H334JL	P. CAPACITOR 50V 0. 33U	1	
C3026	ECEA1HU4R7	E. CAPACITOR 50V 4. 7U	1	
C3027	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3028	ECUX1H471JCV	C. CAPACITOR CH 50V 470P	1	
C3030	ECUX1H561JCV	C. CAPACITOR CH 50V 560P	1	
C3032	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C3033	ECQB1H683JF	P. CAPACITOR 50V 0. 068U	1	
C3034	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3035	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3036	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	1	
C3037	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3038	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C3039	ECEA1HU4R7	E. CAPACITOR 50V 4. 7U	1	
C3042, 43	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
C3044	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3045	ECUX1H101JCV	C. CAPACITOR CH 50V 100P	1	
C3046	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	1	
C3047	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3048	ECUX1H121JCV	C. CAPACITOR CH 50V 120P	1	
C3049	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3053	ECUX1H681JCV	C. CAPACITOR CH 50V 680P	1	
C3054, 55	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	2	
C3056	ECUX1H100DCV	C. CAPACITOR CH 50V 10P	1	
C3057	ECUX1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C3059	ECEA1HU2R2	E. CAPACITOR 50V 2. 2U	1	
C3061	ECUX1H120JCV	C. CAPACITOR CH 50V 12P	1	
C3062	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3063	ECUX1H100DCV	C. CAPACITOR CH 50V 10P	1	
C3064	ECUX1H103ZFV	C. CAPACITOR CH 50V 0. 01U	1	
C3065	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C3066	ECEA1HU2R2	E. CAPACITOR 50V 2. 2U	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3067	ECUX1H050CCV	C. CAPACITOR CH 50V 5P	1	
C3068	ECEA0JU221	E. CAPACITOR 6.3V 220U	1	
C3069	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3070	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C3071	ECEA1HU4R7	E. CAPACITOR 50V 4.7U	1	
C3072	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3073	ECUX1H270JCV	C. CAPACITOR CH 50V 27P	1	
C3074	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3075	ECEA1HU4R7	E. CAPACITOR 50V 4.7U	1	
C3076, 77	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	2	
C3078, 79	ECEA0JU101	E. CAPACITOR 6.3V 100U	2	
C3080, 81	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	2	
C3082	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C3083	ECEA0JU101	E. CAPACITOR 6.3V 100U	1	
C3084	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3085	ECEA0JU101	E. CAPACITOR 6.3V 100U	1	
C3086	ECUX1H121JCV	C. CAPACITOR CH 50V 120P	1	
C3087	ECUX1H270JCV	C. CAPACITOR CH 50V 27P	1	
C3089	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3090	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3091	ECQV1H474JL	P. CAPACITOR 50V 0.47U	1	
C3093	ECUX1H681JV	C. CAPACITOR CH 50V 680P	1	
C3094	ECEA1CPK470	E. CAPACITOR 16V 47U	1	
C3099	ECUX1H102JCV	C. CAPACITOR CH 50V 1000P	1	
C3100	ECEA0JU331	E. CAPACITOR 6.3V 330U	1	
C3101	ECEA1HU2R2	E. CAPACITOR 50V 2.2U	1	
C3102	ECEA1HN2R2S	E. CAPACITOR 50V 2.2U	1	
C3104	ECEA1HU010	E. CAPACITOR 50V 1U	1	
C3105	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3106	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C3107	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C3108	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C3109	ECEA1HU4R7	E. CAPACITOR 50V 4.7U	1	
C3110	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C3112	ECEA0JN470S	E. CAPACITOR 6.3V 47U	1	
C3114	ECUX1H330JCV	C. CAPACITOR CH 50V 33P	1	
C3115	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C3116	ECUX1H330JCV	C. CAPACITOR CH 50V 33P	1	
C3119	ECEA0JN470S	E. CAPACITOR 6.3V 47U	1	
C3120	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3123	ECEA1CU470	E. CAPACITOR 16V 47U	1	
C3124	ECUM1C224ZFV	C. CAPACITOR CH 16V 0.22U	1	
C3125	ECEA0JU471	E. CAPACITOR 6.3V 470U	1	
C3126	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C3127	ECUX1H270JCV	C. CAPACITOR CH 50V 27P	1	
C3129	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C3130	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C3131	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C3132	ECUX1H560JCV	C. CAPACITOR CH 50V 56P	1	
C3133	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C3134	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C3135	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C3136	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C3137	ECUX1H120JCV	C. CAPACITOR CH 50V 12P	1	
C3138	ECUX1H180JCV	C. CAPACITOR CH 50V 18P	1	
C3139	ECUX1H030CCV	C. CAPACITOR CH 50V 3P	1	
C3140	ECUX1H820JCV	C. CAPACITOR CH 50V 82P	1	
C3142	ECUX1H180JCV	C. CAPACITOR CH 50V 18P	1	
C3143	ECEA1CU100	E. CAPACITOR 16V 10U	1	
C3145	ECUX1H270JCV	C. CAPACITOR CH 50V 27P	1	
C3146	ECUX1H560JCV	C. CAPACITOR CH 50V 56P	1	
C3147	ECEA1CU220	E. CAPACITOR 16V 22U	1	
C3148	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C3149	ECUX1H120JCV	C. CAPACITOR CH 50V 12P	1	
C3151	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	1	
C3152	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
CT3002	ECV1ZW40X60	TRIMMER	1	
D3001	MA3200-M	DIODE	1	
D3002	MA28W	DIODE	1	
D3004, 05	MA151K	DIODE	2	
D3006	MA151WK	DIODE	1	
D3007	1SS254	DIODE	1	
D3008	MA151K	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D3009	MA717	DIODE	1	
D3010	MA151K	DIODE	1	
D3012	MA717	DIODE	1	
D3013	MA151K	DIODE	1	
D3014	MA717	DIODE	1	
DL3001	VLD0126	DELAY LINE	1	
FL3002	ELB4M080	FILTER	1	
FL3003	VLF0639	FILTER	1	
IC3001	VEFH03F	IC	1	
IC3002	AN3916	IC	1	
IC3003	AN3296S	IC	1	
IC3004	MN1280P	IC	1	
IC3005	M50554-001SP	IC	1	
IC3006	TC7S32F	IC	1	
IC3007	TC4W53F	IC	1	
IC3008	MC74HC4053F	IC	1	
IC3010	UPC78L05J	IC	1	
IC3011	NJM2233BMA	IC	1	
IC3014	TC7S08F	IC	1	
L3001, 02	VLQEL05S101J	COIL	2	
L3004	VLQEL05S5R6J	COIL 5.6UH	1	
L3005	VLQEL05S101J	COIL	1	
L3007	VLQEL05S100J	COIL	1	
L3008	VLQEL05S180J	COIL	1	
L3009	VLQEL05S101J	COIL	1	
L3010	VLQEL05S220J	COIL	1	
L3012	VLQEL05S120J	COIL	1	
L3013	VLQEL05S680J	COIL	1	
L3014, 15	VLQEL05S101J	COIL	2	
L3016	VLQEL05S680J	COIL	1	
L3017-21	VLQEL05S101J	COIL	5	
L3022	VLQEL05S330J	COIL	1	
L3023, 24	VLQEL05S470J	COIL	2	
L3026	VLQEL05S820J	COIL	1	
L3029	VLQEL05S101J	COIL	1	
L3032	VLQEL05S680J	COIL	1	
L3033	VLQEL05S101J	COIL	1	
L3035	VLQEL05S470J	COIL	1	
L3036	VLQEL05S820J	COIL	1	
L3037	VLQEL05S330J	COIL	1	
L3038	VLQEL05S390J	COIL	1	
L3039	VLQEL05S820J	COIL	1	
P3001	VJP3176B064	CONNECTOR (MALE)	1	
Q3001	2SB641	TRANSISTOR	1	
Q3002	MSB709-R	TRANSISTOR	1	
Q3003-07	MSD601-R	TRANSISTOR	5	
Q3008	MSC2295-B	TRANSISTOR	1	(B)
Q3009	MSD601-R	TRANSISTOR	1	
Q3010	MSB709-R	TRANSISTOR	1	
Q3011-13	MSC2295-B	TRANSISTOR	3	(B)
Q3014	2SD1328	TRANSISTOR	1	
Q3015	MSD601-R	TRANSISTOR	1	
Q3016	MSB709-R	TRANSISTOR	1	
Q3017-19	MSD601-R	TRANSISTOR	3	
Q3020	MSB709-R	TRANSISTOR	1	
Q3021-24	MSD601-R	TRANSISTOR	4	
Q3025	MSC2295-B	TRANSISTOR	1	(B)
Q3026	MSB709-R	TRANSISTOR	1	
Q3027	MSD601-R	TRANSISTOR	1	
Q3028, 29	MSB709-R	TRANSISTOR	2	
Q3030	MSC2295-B	TRANSISTOR	1	(B)
Q3031	MSB709-R	TRANSISTOR	1	
Q3033	MSC2295-B	TRANSISTOR	1	(B)
Q3034, 35	MSB709-R	TRANSISTOR	2	
Q3036	2SA1022-B	TRANSISTOR	1	(B)
Q3038	MSC2295-B	TRANSISTOR	1	(B)
QR3001	MUN2213	TRANSISTOR-RESISTOR	1	
QR3003	DTC363EK	TRANSISTOR-RESISTOR	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
QR3006	DTC363EK	TRANSISTOR-RESISTOR	1	
QR3007-09	MUN2213	TRANSISTOR-RESISTOR	3	
QR3014, 15	MUN2213	TRANSISTOR-RESISTOR	2	
QR3019	MUN2211	TRANSISTOR-RESISTOR	1	
QR3020, 21	MUN2213	TRANSISTOR-RESISTOR	2	
QR3022	MUN2112	TRANSISTOR-RESISTOR	1	
QR3023	XN1213	TRANSISTOR-RESISTOR	1	
QR3024	XN1211	TRANSISTOR-RESISTOR	1	
QR3025	MUN2213	TRANSISTOR-RESISTOR	1	
QR3027	MUN2211	TRANSISTOR-RESISTOR	1	
QR3028	MUN2111	TRANSISTOR-RESISTOR	1	
QR3029	XN1213	TRANSISTOR-RESISTOR	1	
QR3031, 32	MUN2213	TRANSISTOR-RESISTOR	2	
R3001	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R3002	ERJ3GEYG473	M. RESISTOR CH 1/16W 47K	1	
R3003	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R3004	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3005, 06	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	2	
R3007	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3008	ERJ3GEYG332	M. RESISTOR CH 1/16W 3. 3K	1	
R3009, 10	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R3011	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R3012	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R3013	ERJ3GEYJ753	M. RESISTOR CH 1/16W 75K	1	
R3014	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3015	ERJ3GEYJ683	M. RESISTOR CH 1/16W 68K	1	
R3016, 17	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R3018	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3019	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3020	ERJ3GEYJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R3022	ERJ3GEYJ564	M. RESISTOR CH 1/16W 560K	1	
R3023	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3024	ERJ3GEYJ684	M. RESISTOR CH 1/16W 680K	1	
R3026	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R3027	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R3028	ERJ3GEYG681	M. RESISTOR CH 1/16W 680	1	
R3029	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3030	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R3031	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R3032	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R3033	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R3034	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R3036	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R3037, 38	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	2	
R3039	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R3040	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3042	ERJ3GEYJ271	M. RESISTOR CH 1/16W 270	1	
R3043	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R3044	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3047	ERJ3GEYG561	M. RESISTOR CH 1/16W 560	1	
R3051	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R3052	ERJ3GEYG332	M. RESISTOR CH 1/16W 3. 3K	1	
R3053	ERJ3GEYG152	M. RESISTOR CH 1/16W 1. 5K	1	
R3055	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3056	ERJ6GEYG152	M. RESISTOR CH 1/10W 1. 5K	1	
R3057, 58	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R3059, 60	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R3061	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3062	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R3063	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R3064	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	1	
R3065	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3066	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3067	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R3069	ERJ3GEYJ105	M. RESISTOR CH 1/16W 1M	1	
R3070	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R3071	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3072	ERJ3GEYJ272	M. RESISTOR CH 1/16W 2. 7K	1	
R3073	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3074	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R3075	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3076	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R3077	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R3078	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3079	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3080	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R3081	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R3082	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1. 8K	1	
R3083	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R3084	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R3085, 86	ERJ3GEYG682	M. RESISTOR CH 1/16W 6. 8K	2	
R3087	ERJ3GEYG822	M. RESISTOR CH 1/16W 8. 2K	1	
R3088	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R3089	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3092	ERJ3GEYG822	M. RESISTOR CH 1/16W 8. 2K	1	
R3093	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R3095	ERJ3GEYJ470	M. RESISTOR CH 1/16W 47	1	
R3096	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3097	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R3098	ERJ3GEYG112	M. RESISTOR CH 1/16W 1. 1K	1	
R3099	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3100	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3101	ERJ3GEYG151	M. RESISTOR CH 1/16W 150	1	
R3102	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3104	ERJ3GEYG103	M. RESISTOR CH 1/16W 10K	1	
R3105	ERJ3GEYG222	M. RESISTOR CH 1/16W 2. 2K	1	
R3106	ERJ3GEYG392	M. RESISTOR CH 1/16W 3. 9K	1	
R3107	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3109	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3111	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3112	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R3113	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R3115	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3118	ERJ3GEYJ330	M. RESISTOR CH 1/16W 33	1	
R3120, 21	ERJ3GEYG103	M. RESISTOR CH 1/16W 10K	2	
R3122	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R3123	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3128	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R3129	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3132	ERJ3GEYG103	M. RESISTOR CH 1/16W 10K	1	
R3133	ERJ3GEYG183	M. RESISTOR CH 1/16W 18K	1	
R3135, 36	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	2	
R3137	ERJ3GEYG750	M. RESISTOR CH 1/16W 75	1	
R3138	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3140	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3142	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3143, 44	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	2	
R3145	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3147, 48	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	2	
R3149	ERJ3GEYG821	M. RESISTOR CH 1/16W 820	1	
R3150	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3151	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R3152	ERJ3GEYJ474	M. RESISTOR CH 1/16W 470K	1	
R3153	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R3155	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R3156	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3157	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3158, 59	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	2	
R3160	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3161	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R3162	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3163	ERJ3GEYG333	M. RESISTOR CH 1/16W 33K	1	
R3164	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3165, 66	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	2	
R3167	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3169	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R3170	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3171	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R3172	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R3174	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R3176	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R3179	ERJ3GEYG103	M. RESISTOR CH 1/16W 10K	1	
R3180, 81	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	2	
R3183	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3185	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3187	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3190	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3192	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3193	ERJ3GEYJ184	M. RESISTOR CH 1/16W 180K	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3196	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R3199, 00	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	2	
R3201	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R3202	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3205	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R3206	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
TG3001	VJR0098	TEST POINT	1	
TP3001	VJR0098	TEST POINT	1	
VR3002	EVN49CA00B54	V. RESISTOR 50K	1	
VR3004	EVN49CA00B52	V. RESISTOR 500	1	
VR3006	EVN49CA00B13	V. RESISTOR 1K	1	
X3001	VSX0197	CRYSTAL OSCILLATOR	1	
■	VEP04389D	AUDIO C. B. A.	1	(RTL)
C4001	ECQB1H332JF	P. CAPACITOR 50V 3300P	1	
C4002	ECUM1H471JCN	C. CAPACITOR CH 50V 470P	1	
C4004	ECEA50M1	E. CAPACITOR 16V 1U	1	
C4005	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4006	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C4007	ECEA50M1	E. CAPACITOR 16V 1U	1	
C4008	ECEA1HKAR22	E. CAPACITOR 50V 0. 22U	1	
C4009	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4010	ECQB1H682JF	P. CAPACITOR 50V 6800P	1	
C4011	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C4012	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4013	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4014	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C4015, 16	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	2	
C4017	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	1	
C4018	ECQB1H822JF	P. CAPACITOR 50V 8200P	1	
C4020	ECQV1H224JL	P. CAPACITOR 50V 0. 22U	1	
C4022	ECEA1EK4R7	E. CAPACITOR 25V 4. 7U	1	
C4023	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C4024	ECEA1CU471	E. CAPACITOR 16V 470U	1	
C4025	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4026	ECEA16M33	E. CAPACITOR 16V 33U	1	
C4027	ECQB1H153JF	P. CAPACITOR 50V 0. 015U	1	
C4028	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4029	ECHS1332JZ	P. CAPACITOR 100V 3300P	1	
C4030	ECCF1H331J	C. CAPACITOR 50V 330P	1	
C4031	ECCD2H121J	C. CAPACITOR 500V 120P	1	
C4032	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4033	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C4034	ECQB1H103JF	P. CAPACITOR 50V 0. 01U	1	
C4035	ECUM1H103KBN	C. CAPACITOR CH 50V 0. 01U	1	
C4037	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4038	ECQB1H822JF	P. CAPACITOR 50V 8200P	1	
C4039	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4040	ECUM1H102JCN	C. CAPACITOR CH 50V 1000P	1	
D4001	11EQS04	DIODE	1	
D4002	MA151K	DIODE	1	
D4003	MA151WK	DIODE	1	
D4005	MA721	DIODE	1	
IC4001	BA7766AS	IC	1	
L4001	VLQEL05S471K	COIL 470UH	1	
L4002	VLQEL07F822J	COIL 8200UH	1	
P4001	VJP3176B032	CONNECTOR (MALE)	1	
P4003	VJP1231T	CONNECTOR (MALE) 4P	1	
Q4001	MSD601-R	TRANSISTOR	1	
Q4002	2SD639	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q4003, 04	2SD1149-R	TRANSISTOR	2	
Q4005	2SB710A-R	TRANSISTOR	1	
Q4006	2SD1328-R	TRANSISTOR	1	
Q4007	MSB709-R	TRANSISTOR	1	
Q4008	2SD1328-R	TRANSISTOR	1	
QR4001-04	MUN2213	TRANSISTOR-RESISTOR	4	
QR4008	MUN2211	TRANSISTOR-RESISTOR	1	
R4001	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R4002	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	1	
R4003	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4004	ECUM1H223KBN	C. CAPACITOR CH 50V 0. 022U	1	
R4005	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R4006	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R4007	ERJ6GEYG271	M. RESISTOR CH 1/10W 270	1	
R4008	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4009	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R4010	ERJ6GEYG392	M. RESISTOR CH 1/10W 3. 9K	1	
R4012	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4013	ERJ6GEYG394	M. RESISTOR CH 1/10W 390K	1	
R4014	ERJ6GEYF822	M. RESISTOR CH 1/10W 8. 2K	1	
R4015	ERJ6GEYG682	M. REISITOR CH 1/10W 6. 8K	1	
R4016	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4017	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R4018	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4019	ERJ6GEYG303	M. RESISTOR CH 1/10W 30K	1	
R4020, 21	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4022	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R4023	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4024	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4025	ERJ6GEYG392	M. RESISTOR CH 1/10W 3. 9K	1	
R4027, 28	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	2	
R4029	ERJ6GEYF822	M. RESISTOR CH 1/10W 8. 2K	1	
R4030	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R4031	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R4033	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R4034	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4035	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	1	
R4036	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4037	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4038	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4039	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	1	
R4040	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4041	ERJ6GEYG151	M. RESISTOR CH 1/10W 150	1	
R4042	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R4043	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4045	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
R4046, 47	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4048	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R4050	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R4051	ERJ6GEYF822	M. RESISTOR CH 1/10W 8. 2K	1	
R4053, 54	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R4056	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	1	
R4057	ERJ6GEYG272	M. RESISTOR CH 1/10W 2. 7K	1	
T4001	EIQ7QF014Q	TRANSFORMER	1	
TP4001-03	VJR0098	TEST POINT	3	
VR4001	EVN49CA00B14	V. RESISTOR 10K	1	
VR4002	EVN49CA00B25	V. RESISTOR 200K	1	
■	VEP05137M	HEAD AMP C. B. A.	1	(RTL)
C501	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C502	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C505	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C507	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C508	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	

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Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
C509	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C510, 11	ECUM1H223KBN	C. CAPACITOR CH 50V 0. 022U	2	
C513	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C514	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C516	ECUM1H220JCN	C. CAPACITOR CH 50V 22P	1	
C517	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C518	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C522	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C523	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C524	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C525	ECQV1H104JM	P. CAPACITOR 50V 0. 1U	1	
C527	ECQV1H104JM	P. CAPACITOR 50V 0. 1U	1	
C528	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C529	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C530	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C531	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C532	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C533	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C534, 35	ECEA1CKA100	E. CAPACITOR 16V 10U	2	
C536	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C537	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C538	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C539	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C540	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C541	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C542	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	1	
C543	ECUM1H560JCN	C. CAPACITOR CH 50V 56P	1	
IC501	BA7274S	IC	1	
L501	VLQEL05F101J	COIL 100UH	1	
L503	VLQEL05F390K	COIL	1	
L504	VLQEL05F101J	COIL 100UH	1	
P501	VJP3082	CONNECTOR (MALE)	1	
P502	VJS1449	CONNECTOR (FEMALE)	1	
Q501	MSB709-R	TRANSISTOR	1	
Q502	MSC2295-B	TRANSISTOR	1	(B)
QR501	DTC363EK	TRANSISTOR-RESISTOR	1	
R501	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R502	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R503	ERJ6GEYG152	M. RESISTOR CH 1/10W 1. 5K	1	
R504	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R507	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R508	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R510	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R512	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R513	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	1	
R515	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	1	
R518	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	1	
R519	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R523	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R524	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R525	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R526	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R527	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R528	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R529	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R530	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R531	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R532	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R533	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R534-36	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	3	
R538	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
TP507, 08	VJR0098	TEST POINT	2	
VR501	EVND1AA00B23	V. RESISTOR 2K	1	
VR502	EVND1AA00B13	V. RESISTOR 1K	1	
W2-16	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	15	
W18	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	

Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
		MISCELLANEOUS		
E50	VSC2354	SHIELD CASE (MAIN)	1	
E51	VSC2353	SHIELD CASE (UPPER)	1	
E52	VSC2355	SHIELD CASE (LOWER)	1	
■	VEP06826M	FRONT (1) C. B. A.	1	(RTL)
BZ6601	VSQ0813	BUZZER	1	
C6601	ECUM1H220JCN	C. CAPACITOR CH 50V 22P	1	
C6602	ECUM1H390JCN	C. CAPACITOR CH 50V 39P	1	
C6603	ECEA1AKS221	E. CAPACITOR 10V 220U	1	
C6604	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6605	ECEA1HKSR22	E. CAPACITOR 50V 0. 22U	1	
C6606	ECEA1CKS330	E. CAPACITOR 16V 33U	1	
C6607	ECEA1CKS100	E. CAPACITOR 16V 10U	1	
C6608	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6610	ECEA1HKS220	E. CAPACITOR 50V 22U	1	
C6611	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	1	
C6612	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6613	ECEA1AKS221	E. CAPACITOR 10V 220U	1	
C6614-16	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	3	
C6617	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
CT6601, 02	ECRHA030E41	TRIMMER	2	
D6601	MA4110	DIODE	1	
D6607	MA151K	DIODE	1	
D6608-12	MA152K	DIODE	5	
D6613-15	MA151K	DIODE	3	
DP6601	VSL0494	DISPLAY	1	
IC6601	UPD75238J126	IC	1	
IC6602	UPD6252GS	IC	1	
IC6603	S-80726AL	IC	1	
IC6604	MN1280R	IC	1	
IC6606	MC74HC4053F	IC	1	
J6603	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
P6601-03	VJP3503	CONNECTOR (MALE)	3	
P6604	VJP2652	CONNECTOR (MALE)	1	
Q6601, 02	MSD602-R	TRANSISTOR	2	(R)
Q6606	MSB709-R	TRANSISTOR	1	
QR6602, 03	MUN2113	TRANSISTOR-RESISTOR	2	
QR6604	MUN2213	TRANSISTOR-RESISTOR	1	
R6601	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6603	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6604, 05	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R6607, 08	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R6609	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R6610	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R6611-13	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	3	
R6614-21	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	8	
R6622-35	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	14	
R6636	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R6637	ERJ6GEYG332	M. RESISTOR CH 1/10W 3. 3K	1	
R6638-41	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	4	
R6642	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6643	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R6644	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R6645-53	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	9	
R6655	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R6656	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	

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Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6657-61	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	5	
R6662	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6663	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
SW6601-03	EVQQS205K	SWITCH	3	
TP6601	VJR0098	TEST POINT	1	
TPG	VJR0098	TEST POINT	1	
X6601	VSX0140	CRYSTAL OSCILLATOR	1	
X6602	VSX0094C	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
E58	VJF0398	FIP HOLDER	1	
■	VEP06827N	SYSTEM CONTROL C. B. A.	1	(RTL)
C2501	ECQB1H473JF	P. CAPACITOR 50V 0. 047U	1	
C2502	ECQB1H222JF	P. CAPACITOR 50V 2200P	1	
C2503	ECQB1H273JF	P. CAPACITOR 50V 0. 027U	1	
C2504	ECQB1H222JF	P. CAPACITOR 50V 2200P	1	
C2510	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2512-14	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	3	
C2516-19	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	4	
C6001	ECEA1AKA220	E. CAPACITOR 10V 22U	1	
C6002, 03	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	2	
C6004	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6005	ECUM1H182KBN	C. CAPACITOR CH 50V 1800P	1	
C6006	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C6007, 08	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	2	
C6009	ECEA1EKA4R7	E. CAPACITOR 25V 4. 7U	1	
C6010	ECQB1H104JF	P. CAPACITOR 50V 0. 1U	1	
C6011	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6013, 14	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	2	
C6036	ECEA1CU222	E. CAPACITOR 16V 2200U	1	
C6038, 39	ECEA0JU332	E. CAPACITOR 6. 3V 3300U	2	
C6040	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6041	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C6042	ECEA0JKA470	E. CAPACITOR 6. 3V 47U	1	
C6043	ECUM1E104ZFN	C. CAPACITOR CH 25V 0. 1U	1	
C6044-46	ECQB1H102JF	P. CAPACITOR 50V 1000P	3	
C6047	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C6048	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6049	ECQB1H102JF	P. CAPACITOR 50V 1000P	1	
C6050	ECUM1H151JCN	C. CAPACITOR CH 50V 150P	1	
C6051	ECEA1CU331	E. CAPACITOR 16V 330U	1	
C6052	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6053, 54	ECEA1CKA100	E. CAPACITOR 16V 10U	2	
C6055	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C6056, 57	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	2	
C6058	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6059	ECEA1HKN010	E. CAPACITOR 50V 1U	1	
C6060	ECEA1HKAR47	E. CAPACITOR 50V 0. 47U	1	
C6061, 62	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	2	
C6064	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	1	
C6065	ECQV1H224JZ	P. CAPACITOR 50V 0. 22U	1	
C6201, 02	ECUM1H103ZFN	C. CAPACITOR CH 50V 0. 01U	2	
C6203	ECEA0JKS330	E. CAPACITOR 6. 3V 33U	1	
D2501, 02	MA151K	DIODE	2	
D6001-04	MA151K	DIODE	4	
D6007, 08	11EQS04	DIODE	2	
D6009	MA151K	DIODE	1	
D6010	MA170	DIODE	1	
D6012	MA165	DIODE	1	
D6201	MA151K	DIODE	1	
FL6001	VLF0634	FILTER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC2501, 02	LM324NS	IC	2	
IC2503	LM393PS	IC	1	
IC2505	MC14053BF	IC	1	
IC2506	MC14052BF	IC	1	
IC2507	MC14053BF	IC	1	
IC6001	MN188166VMEM	IC	1	
IC6002	MN1280R	IC	1	
IC6003	MN1280-U	IC	1	
IC6004	LM393PS	IC	1	
IC6005	CD4019BCMX	IC	1	
IC6006	LM393PS	IC	1	
IC6007	MC14053BF	IC	1	
IC6008	MC14001BF	IC	1	
IC6009	MC14538BF	IC	1	
IC6010	M54649L	IC	1	
IC6011	LM324NS	IC	1	
IC6201, 02	MC74HC373AF	IC	2	
J10	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
L2502	VLQ0460	COIL	1	
L6001	VLQ0460	COIL	1	
P6002	VJP3176B064	CONNECTOR (MALE)	1	
P6003	VJS2163W	CONNECTOR (FEMALE)	1	
Q6001	2SD973	TRANSISTOR	1	
Q6002	MSB709-R	TRANSISTOR	1	
Q6003	2SB819	TRANSISTOR	1	
Q6004	MSD601-R	TRANSISTOR	1	
Q6005	2SB819	TRANSISTOR	1	
Q6006-08	MSD601-R	TRANSISTOR	3	
QR2501-05	MUN2213	TRANSISTOR-RESISTOR	5	
QR6001	MUN2111	TRANSISTOR-RESISTOR	1	
QR6002	MUN2212	TRANSISTOR-RESISTOR	1	
QR6003, 04	MUN2111	TRANSISTOR-RESISTOR	2	
QR6005-09	MUN2211	TRANSISTOR-RESISTOR	5	
QR6201-04	MUN2211	TRANSISTOR-RESISTOR	4	
QR6205	MUN2113	TRANSISTOR-RESISTOR	1	
QR6206, 07	MUN2211	TRANSISTOR-RESISTOR	2	
QR6208	MUN2113	TRANSISTOR-RESISTOR	1	
QR6209	UN2216	TRANSISTOR-RESISTOR	1	
QR6210	MUN2211	TRANSISTOR-RESISTOR	1	
R2501	ERJ6GEYG682	M. REISITOR CH 1/10W 6. 8K	1	
R2502	ERJ6GEYJ334	M. RESISTOR CH 1/10W 330K	1	
R2503	ERJ6GEYJ274	M. RESISTOR CH 1/10W 270K	1	
R2504	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R2505	ERJ6GEYJ334	M. RESISTOR CH 1/10W 330K	1	
R2506	ERJ6GEYG154	M. RESISTOR CH 1/10W 150K	1	
R2507-15	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	9	
R2516	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R2517	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2518-20	ERJ6GEYF124	M. RESISTOR CH 1/10W 120K	3	
R2521	ERJ6GEYG154	M. RESISTOR CH 1/10W 150K	1	
R2522	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2523, 24	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R2525	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2526	ERJ6GEYG823	M. RESISTOR CH 1/10W 82K	1	
R2528	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6001	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R6002	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R6003	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R6004	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6005	ERJ6GEYG564	M. RESISTOR CH 1/10W 560K	1	
R6006	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6007	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	1	
R6008	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6009	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6010	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R6011	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R6012, 13	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R6014-18	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	5	

VEP06827N / VEP06834B / VEP04385B / VEP04387A / VEK3578

Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
R6019	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	1	
R6020, 21	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R6022-26	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	5	
R6027, 28	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	2	
R6029	ERJ6GEYG181	M. RESISTOR CH 1/10W 180	1	
R6030	ERJ6GEYG182	M. RESISTOR CH 1/10W 1. 8K	1	
R6031	ERJ6GEYG122	M. RESISTOR CH 1/10W 1. 2K	1	
R6032-34	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R6035	ERD2FCG220	C. RESISTOR 2W 22	1	
R6036	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6037	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R6038	ERJ6GEYG272	M. RESISTOR CH 1/10W 2. 7K	1	
R6039, 40	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R6041	ERJ6GEYG272	M. RESISTOR CH 1/10W 2. 7K	1	
R6042	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R6043	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R6044	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6045, 46	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R6047	ERJ6GEYG682	M. REISITOR CH 1/10W 6. 8K	1	
R6048	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6049	ERJ6GEYG302	M. RESISTOR CH 1/10W 3K	1	
R6050	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6051-59	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	9	
R6070	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6071	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	1	
R6073	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6074	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6075	ERJ6GEYG121	M. RESISTOR CH 1/10W 120	1	
R6076	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R6077	ERJ6GEYG474	M. RESISTOR CH 1/10W 470K	1	
R6078, 79	ERJ6GEYG222	M. RESISTOR CH 1/10W 2. 2K	2	
R6080	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6081	ERJ6GEYG392	M. RESISTOR CH 1/10W 3. 9K	1	
R6082	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	1	
R6083	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6084	ERJ6GEYG562	M. RESISTOR CH 1/10W 5. 6K	1	
R6085	ERD2FCG220	C. RESISTOR 2W 22	1	
R6201	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6202-05	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	4	
R6206	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R6207	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6208	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R6210	ERDS2TJ221	C. RESISTOR 1/4W 220	1	
R6211	ERJ6GEYF472	M. RESISTOR CH 1/10W 4. 7K	1	
TP2501	VJR0108	TEST POINT	1	
TP6002-04	VJR0108	TEST POINT	3	
X6001	VSX0230	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
E74	VWJ04CN180CA	FLEXIBLE CABLE	1	
■	VEP06834B	FRONT(2) C. B. A.	1	(RTL)
D6701-21	MA165	DIODE	21	
LD6701	LN840RCP	LED	1	
P6701	VJS2652	CONNECTOR (FEMALE)	1	
R6701	ERDS2TJ221	C. RESISTOR 1/4W 220	1	
R6703	EROS2CKG7502	M. RESISTOR 1/4W 75K	1	
R6704	ERDS2TO	C. RESISTOR 1/4W 0	1	
SW6701-18	EVQQS205K	SWITCH	18	
SW6719, 20	VSS0162	SWITCH	2	
SW6721	EVQQS205K	SWITCH	1	

Ref. No.	Part No.	Part Name & Descriptior	Pcs	Remarks
VR6701	EVUJ16E04B24	V. RESISTOR 20K	1	
		MISCELLANEOUS		
E59	VMX1436	LED PSACER	1	
E60	VMX0473	SPACER	1	
■	VEP04385B	REAR JACK C. B. A.	1	(RTL)
CA4901	VCR0503I103M	C-MODULE	1	
J4901	VJS3154	CONNECTOR (FEMALE)	1	
J4911	VJS3154	CONNECTOR (FEMALE)	1	
J4913	VJJ0322	MONITOR JACK	1	
J4914	VJJ0323	RCA PIN JACK	1	
J4915	VJH0672A009	TERMINAL	1	
P4901-04	VJP3503	CONNECTOR (MALE)	4	
P4905	VWJ08CN080CA	FLEXIBLE CABLE	1	
R4901	ERDS2TJ750	C. RESISTOR 1/4W 75	1	
R4911	ERDS2TJ221	C. RESISTOR 1/4W 220	1	
■	VEP04387A	MIC AMP C. B. A.	1	(RTL)
C4951	ECEA1CKA330	E. CAPACITOR 16V 33U	1	
C4952	ECEA1EKS3R3	E. CAPACITOR 25V 3. 3U	1	
C4953	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4954	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C4955, 56	ECEA1CKA100	E. CAPACITOR 16V 10U	2	
C4957	ECKF1H103ZF	C. CAPACITOR 50V 0. 01U	1	
D4951	MA165	DIODE	1	
IC4951	VCR0172	IC	1	
J4951	VJJ0351	MIC JACK	1	
J4952	VJJ0352	REMOTE JACK	1	
P4951	VJS2650A008Z	CONNECTOR (FEMALE)	1	
Q4951	2SD636-R	TRANSISTOR	1	(R)
R4951	ERDS2TJ682	C. RESISTOR 1/4W 6. 8K	1	
R4952	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R4953	ERDS2TJ121	C. RESISTOR 1/4W 120	1	
R4954	ERDS2TJ223	C. RESISTOR 1/4W 22K	1	
R4955	ERDS2TJ104	C. RESISTOR 1/4W 100K	1	
R4956, 57	ERDS2TJ563	C. RESISTOR 1/4W 56K	2	
R4958	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
		MISCELLANEOUS		
E61	VMP3847	MIC ANGLE	1	
E62	XYE3+EF8	SCREW	2	
■	VEK3578	PHOTO TR. (L)	1	(RTL)
Q1501	PN150NVS	PHOTO TRANSISTOR	1	

SECTION 6

SCHEMATIC DIAGRAMS AND CIRCUIT BOARDS

CONTENTS

POWER SUPPLY 1 C.B.A. AND POWER SUPPLY 2 C.B.A. SCM-3
POWER SUPPLY 1 AND POWER SUPPLY 2 SCHEMATIC DIAGRAM SCM-3
SYSTEM CONTROL SCHEMATIC DIAGRAM SCM-4
SYSTEM CONTROL C.B.A. SCM-5
SERVO C.B.A. SCM-6
SERVO SECTION SCHEMATIC DIAGRAM SCM-7
MOTOR DRIVE SECTION SCHEMATIC DIAGRAM SCM-8
DC - DC SECTION SCHEMATIC DIAGRAM SCM-9
REEL DRIVE SCHEMATIC DIAGRAM SCM-10
REEL DRIVE C.B.A. SCM-11
VIDEO 2 C.B.A. SCM-12
VIDEO 2 SCHEMATIC DIAGRAM SCM-13
VIDEO 3 SCHEMATIC DIAGRAM SCM-14
VIDEO 3 C.B.A. SCM-15
AUDIO SCHEMATIC DIAGRAM AND AUDIO C.B.A. SCM-16
HEAD AMP C.B.A. AND HEAD AMP SCHEMATIC DIAGRAM SCM-17
FRONT 2 C.B.A. AND FRONT 2 SCHEMATIC DIAGRAM SCM-18
FRONT 1 C.B.A. SCM-18
FRONT 1 SCHEMATIC DIAGRAM SCM-19
REAR JACK AND MIC AMP SUB C.B.A. SCM-20
REAR JACK AND MIC AMP SUB SCHEMATIC DIAGARAM SCM-21
MOTHER C.B.A. BACK-UP SUB C.B.A. ,MOTOR BASE C.B.A. AND
BEND FLEXIBLE UNIT SCM-22
MOTHER AND BACK-UP SUB SCHEMATIC DIAGRAM SCM-23
INTERCONNECTION SCHEMATIC DIAGRAM SCM-24

NOTE : DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST,AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE : THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THESE DIAGRAMS IS REC MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE OUT OF BRACKETS ON THESE DIAGRAMS IS STOP MODE.
MEASUREMENT SIGNAL ... NTSC COLOR SIGNAL. MEASUREMENT TAPE ... S-VHS TAPE.

IMPORTANT SAFETY NOTICE :
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

VEK3578 / VEK4676 / VEK2657 / VEK4265 / VEK6042

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
		MISCELLANEOUS		
E75	VWJ02FN300RR	FLEXIBLE CABLE	1	
E92	VMD0645	GUIDE PLATE	1	
	ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
■	VEK4676	PHOTO TR.(R)	1	(RTL)
C1501	ECKF1H102KB	C.CAPACITOR 50V 1000P	1	
P1508	VJS2165W	CONNECTOR (FEMALE)	1	
Q1502	PN150NVS	PHOTO TRANSISTOR	1	
R1503	ERDS2TJ222	C.RESISTOR 1/4W 2.2K	1	
		MISCELLANEOUS		
E92	VMD0645	GUIDE PLATE	1	
■	VEK2657	TENSION SENSOR	1	(RTL)
P2504	VJS1230T	CONNECTOR (FEMALE)	1	
Q1504	ON1301	PHOTO CUPRIER	1	
R1502	ERDS2TJ102	C.RESISTOR 1/4W 1K	1	
		MISCELLANEOUS		
	ERDS2TJ182	C.RESISTOR 1/4W 1.8K	1	
■	VEK4265	REV.TENSNION SENSOR	1	(RTL)
		MISCELLANEOUS		
E94	XTV26+4F	SCREW	1	
E156	VMA7987	HOLDER	1	
E157	ON1108	PHOTO INTERRUPTER	1	
■	VEK6042	MOTOR BASE	1	(RTL)
P6001	VJS1493	CONNECTOR (FEMALE)	1	
P6002	VJP3106B013	CONNECTOR (MALE)	1	
P6003	VJP1229G	CONNECTOR (MALE)	1	
P6004	VJP1229T	CONNECTOR (MALE)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks